UGANDA PROTECTORATE.

ANNUAL

MEDICAL AND SANITARY REPORT

FOR THE

YEAR ENDED 31ST DECEMBER, 1933.

Published by Command of His Excellency the Governor.

ENTEBBE:

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1934.

Medical Department,
Headquarters Office,
Entebbe, Uganda.
21st March, 1934.

Sir,

I have honour to submit for the information of His Excellency the Governor and for transmission to the Right Honourable the Secretary of State, the Medical Report on the Health and Sanitary Conditions of the Uganda Protectorate for the year 1933, together with the Returns, etc., appended thereto.

I have the honour to be,

Sir,

Your obedient servant,

W. H. KAUNTZE,

Director of Medical Services.

The Honourable
The Chief Secretary to the Government,
Entebbe.

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MAP OF UGANDA PROTECTORATE

Scale of Miles

10 0 10 20 30 40 50 60 70 80 90

29° 30° 32° 34° 35°

4° 2° 0°

SUDAN

Ikoto's

Tereteinie

Kaia

Nimule

Madi Opei

Albert Nile

Kitgum

Loyoro

WEST NILE

ACHOLI

KARAMOJA

Arua

Rhino Camp

Gulu

Paranga

Moroto

Wadelai

GULU

Pakwach

Victoria Nile

Murchison Falls

Tochi

Asua

Lira

Atura

LANGO

Kachung

TESO

Soroti

BUNYORO

LAKE ALBERT

Butiaba

Port Masindi

Masindi

Kibiro

2028

Kaiso

Hoima

Kafu

Luggo

Mpanga

Twevanze

MENGO

BUSOGA

Bugondo

Kumi

Ngora

Pallisa

BUGWERE

BUGISHU

Mbale

Bubulu

Swamp

ELGON 14140

Nkussi

Ntoroko

Nkoko

Kiboga

Lwero

Namasagali

Kamuli

Mbulamuti

Kaliro

Busembatia

Tororo

Muzizi

MUBENDE

Kabulamuliro

Bombo

Luzinga

Iganga

Lugazi

Mutai

Jinja

Busia

Butiti

Fort Portal

Mubende

Kiyegegwa

Mitiyana

Kampala

Ripon Falls

Port Bell

Mpigio

Mjanji

BUDAMA

KENYA

BELGIAN CONGO

RUWENZORI

16794

Lamia

Semliki

Chaka

Mpanga

Katonga

ENTEBBE

Kisumu

To Mombasa

L. GEORGE

Katwe

Ruhoko

Kazinga

L. EDWARD

ANKOLE

MASAKA

Bukakata

Masaka

Sese Islands

Mbarara

Bikira

Simba

KIGEZI

Ishasha

LAKE VICTORIA

3726'

Lirtobo

Kabale

Kagera

MUFUMBIRO

TANGANYIKA

Uganda Survey Dept. Nov 1926

MEDICAL AND SANITARY DEPARTMENT.

ANNUAL REPORT

For the Year ended 31st December, 1933.

Section I.

ADMINISTRATION.

General Remarks.

1. The Finance Committee of 1931 reduced the yearly allocation of the Department for the years 1932, 1933 and 1934 to a maximum of £155,000. It was obvious that a reduction of departmental activities was thereby rendered necessary and that the maintenance of separate health organisations in the various districts was impossible. Indeed, the reduction in numerical strength of the staff of medical officers was so great that two districts, namely, Mubende and Chua, had to be left in the care of Sub-Assistant Surgeons, and even then only one medical officer was available for posting in all but three of the remaining stations. The position at the commencement of the year was, therefore, a skeleton organisation largely developed for the provision of curative services to the native population either through the district hospital or through sub-dispensaries, with an immature health section threatened with almost complete extinction. On the other hand, it was obvious that the time had come when development of sanitary services in the districts was essential. Sir Edward Thornton had already pointed this out in connection with plague. The problem therefore arose as to how best to provide for improved health services with the limited staff and money available. The first step was the diversion of the activities of the medical officer from purely curative work to include the development of rural sanitation in his district, particularly in the areas immediately surrounding the sub-dispensaries which lent themselves to a ready conversion into health centres inasmuch as the curative medical work carried out in them during the past few years had secured the confidence of the neighbouring population. Such a development of the duties of the District Medical Officer made it necessary for him to tour his district far more frequently and intensively than had been the custom in the past and required his absence from his station for a considerable part of the month. It was therefore essential to provide for the efficient running of the station hospital during his absence, and it was decided that this could be best effected if European Nursing Sisters were posted to district hospitals. At the commencement of the year with the staff of Sisters available, it was only possible to fill posts at the hospitals at Kampala, Jinja, Entebbe and Mbale. It was therefore necessary in the pursuance of the policy to increase the number of nursing sisters on the staff, but this could not be done without some reduction of expenditure elsewhere. Fortunately, this could be arranged as in accordance with the considered policy of Government, that Senior African Medical Assistants should eventually replace the majority of Asiatic Sub-Assistant Surgeons, four Sub-Assistant Surgeons were due for retrenchment in the course of the year to make vacancies for Africans. From the saving thus effected provision was possible in the 1934 estimates for two additional European Nursing Sisters which number, assisted by the vagaries of the roster as the result of which most of the European Sisters on the staff will be in the Protectorate during 1934, will permit the posting of sisters at five additional hospitals in the course of the coming year. Economies in other directions also permitted the appointment of three additional sanitary inspectors which, with the present staff, is even then below the minimum essential for the carrying out of sanitary inspections in townships, the organisation and instruction of native populations in rural sanitation and for the development of a proper service of Native Sanitary Inspectors.

2. With this change in the staff, it is possible to proceed with the development of health services, the foundations for which have been laid in previous years. The lines upon which the health service will develop are provisionally settled on the general principle that it is really only the coming generation whose health can be secured and that therefore it is the care of the child which is the essential requirement of the service. In the first place, the environment in which the child is to find itself after birth must be rendered healthier by the provision of better housing, by improving the quality of water supplies, by ensuring greater cleanliness in village surroundings, and by introducing better conservancy arrangements, so reducing the possibilities of infestation with various parasites. For this, the population must be educated in the modern conception of hygiene and this can only be done by continuous instruction and explanation given by medical officers both to the people who attend sub-dispensaries, and to the leaders of the people at barazas. Education can also be effected by the provision of model dwellings, model latrines, model shops and such-like objects at the various Government centres, these forming object lessons for imitation by visitors to these centres. Improvement of environmental conditions will only be possible if the people are sufficiently prosperous to afford the better dwellings and conveniences which are suggested to them. On the one hand, therefore, it is essential that the cost of such improvements should be kept as low as possible by designing model dwellings which do not require skilled labour to build and which only make use of materials such as are readily and cheaply available for the African. On the other hand, effort must be made to encourage increased agricultural production and animal husbandry so that with increased crops and better stock the African peasant may obtain an increased income. It is in this scheme for general "bonification" of the African that co-operation with other departments is essential and it is fortunate that in many respects the need for increased production has already been foreseen and provided for in the policy of the Agricultural and Veterinary Departments, so that at Serere and at Bukalasa small holdings such as a native might be expected to own have been in existence for some considerable time designed to teach rotation of crops and to ensure the economic development of such areas to the greatest possible advantage. The Education Department is also giving instruction at schools on the same lines. We may therefore hope that working hand-in-hand with these departments as we are, in the near future native production will be placed on a sufficiently sound footing to ensure that the population will be wealthy enough to be able to institute the modest improvements which will be demanded by the development of rural sanitation.

3. Having then arranged that the environment in which the newly-born infant will find itself is reasonably sanitary, it is essential that the mother should be supervised during pregnancy so that she may be in a state to bear a healthy infant and to feed him after birth. Ante-natal centres where treatment for venereal disease and the complications of pregnancy will be available are in process of institution at various sub-dispensaries. These function in a small way already in certain places but their full usefulness cannot be attained until a European Nursing Sister is available to supervise them, for African women prefer to be attended by one of their own sex during pregnancy. Associated with these ante-natal clinics must be maternity centres where the African women can be confined. These centres have in the past been developed by the Church Missionary Society and the Roman Catholic Missions in Buganda and in the Eastern Province, and to a smaller extent in the Western and Northern Provinces, and are staffed by African midwives who have been trained either at the Lady Coryndon Maternity Training School or at the Nsambya Maternity Training School in Kampala. Government provides a grant for the training of these midwives and a certain amount towards the initial cost of the maternity centres but, with the limited means at the disposal of the Protectorate Government and the limitation of the finances of the Missionary Societies, the development of maternity centres is slow and it is believed that native administrations would be willing to do more in the matter if the maternity centre was associated with the sub-dispensary. The African of to-day is very much alive to the need for the preservation of child-life. It is hoped that during the coming year some progress will be made in the provision of maternity centres in districts where so far none have functioned. It may be mentioned that a maternity centre has been in existence at Masaka hospital for the past few years and that the number of cases confined there greatly exceeds that of any other single institution in Uganda. A centre has recently been opened at the headquarters of the Busoga Native Administration, six miles

outside Jinja, and has had immediate success, more than thirty women having registered within a fortnight of its opening.

4. It is not sufficient, however, that the ante-natal clinics should provide for the birth of an infant free from hereditary disease. It is essential to associate with these clinics one for post-natal attention at which the mother can obtain advice about the minor ailments of her child and about the best methods of rearing the child, and at which the early symptoms of organic disease can be recognised before it has progressed sufficiently far to do permanent damage to the child. As will be noted later in this report, examination of school children reveals an astounding amount of preventable disease already existent in the child of school age and it is hoped that child welfare centres in association with improved rural sanitation will largely prevent such a thing occurring in the future. At the same time, it is not intended that the child shall pass out of medical supervision when it enters school and school medical inspections will be carried out as far as the limited staff which is available can find time for it.

5. It is on these lines that it is hoped to improve the general health of the population. Curative measures will be necessary in the case of the present adult population as so many of them suffer from venereal disease, yaws and such-like conditions which it is improbable can be cured but at least can be made non-infective to others. With improvements in the health organisation, the demands which are at present made on sub-dispensaries for curative facilities should greatly diminish.

6. The extension of the activities of the District Medical Officer means that his assistant, either the Sub-Assistant Surgeon or the Senior African Medical Assistant, must be able to devote the greater part of his time to hospital work though as the numbers of Africans with medical qualifications grow, it will be possible to employ them on district work as well. It has been the custom in the past for the Sub-Assistant Surgeon to act largely as a clerk and storekeeper, and during the year an attempt has been made, and made, it is hoped, successfully, to place at each district hospital an African Clerk capable of dealing with the store ledgers and office correspondence, thus relieving the Sub-Assistant Surgeon or the Senior African Medical Assistant from work which is really outside his province. At the same time an attempt has been made to post to each district hospital an African capable of doing laboratory work with a view to providing greater facilities for the diagnosis of cases and to relieving the Sub-Assistant Surgeon or Senior African Medical Assistant from laboratory work which could be carried out by a less highly trained individual. Unfortunately, the European staff of the main Protectorate laboratory is small and the accommodation is very cramped, so that only a very limited number of Africans can be enlisted for training as laboratory assistants. Provision has therefore been made for the appointment of an African Laboratory Assistant who has been trained at the Medical Research Laboratory, Nairobi, and who will be able to devote his whole time to the training of African Laboratory Assistants for district hospitals.

7. The last change in organisation which has to be recorded is the reduction of headquarters staff from four officers to three. This has been necessitated by the shortage of medical officers for posting to other stations, and the duties of the post of Sleeping Sickness Officer at headquarters have therefore been divided up between the Director and the two Deputies. With the retirement of Dr. Chell, it has also been possible to reorganise the office work so that in effect the headquarters staff is a Director, Deputy Director and Assistant Director, who are all concerned with all the activities of the department. Four Asiatic clerks have been transferred to other departments in the course of the year, their places being filled by two African clerks, and the resulting economy has rendered possible the appointment of a lady stenographer who also acts as confidential clerk with a great increase of efficiency.

8. As a result of the recommendation of the Governor's Conference, two Research Conferences have been held in Uganda, one dealing with tsetse and trypanosomiasis research and the other with general medical research. The object of the conferences, of which the Director of Medical and Sanitary Services, Uganda, was chairman in both instances, was to co-ordinate the programme of medical research for 1934 so that no unnecessary overlapping should take place in the East African territories. The conferences, which were attended by research officers from the Medical Departments, the Veterinary Departments and the Agricultural Departments of all the East African territories, were successful not only from the point of view of

the formulation of an agreed research programme for 1934, but also in that they enabled workers in the various East African territories to meet each other and have informal discussions upon various aspects of their work. The value of such conferences to research work generally was emphasized by all the delegates and it is hoped that they will be held, as originally intended, every year. The Director of Medical and Sanitary Services was also appointed a delegate to the Veterinary Research Conference to be held at Kabete in January, 1934.

(A) Staff.

9. Principal Appointments, Promotions, Changes, etc.

Appointments :—

	Date.
Dr. W. H. Kauntze, M.B.E., to be Director of Medical and Sanitary Services ...	24-11-32

Acting Appointments :—

	From.		*To.*
Dr. G. R. H. Chell, Deputy Director of Sanitary Service, to act as Director of Medical and Sanitary Services	11- 5-32	...	12- 3-33
Dr. H. R. Neilson, Senior Health Officer, to act as Deputy Director of Sanitary Service	11- 5-32	...	12- 3-33
Dr. R. S. McElroy, Health Officer, to act as Senior Health Officer, Kampala	4- 8-32	...	12- 3-33
Dr. L. D. Dennard, Medical Officer, to act as Senior Medical Officer, Busoga	12-12-32	...	End of year
Dr. A. J. Boase, Medical Officer, to act as Medical Superintendent, Mulago Hospital, and Principal Medical School ...	24- 4-33	...	7-12-33
Dr. A. J. Boase, Medical Officer, to act as Ophthalmic Specialist	24- 4-33	...	End of year
Dr. C. R. Lutze-Wallace, Senior Medical Officer, to act as Deputy Director of Medical Service	16-11-33	...	20-12-33
Dr. N. J. Willans, Assistant Bacteriologist, to act as Senior Bacteriologist	30- 5-33	...	End of year
Miss G. R. Ibbs, Nursing Sister, to act as Senior Nursing Sister, Kampala Hospital	5- 6-33	...	End of year
Miss R. A. Bagot, Senior Nursing Sister, to act as Lady Superintendent of Nurses and Senior Nursing Sister, Mulago Hospital	1-10-33	...	End of year
Mr. A. G. Johnson, Clerk, Office of Titles, to act as Office Superintendent, Medical Department	20- 4-33	...	21-12-33
Mr. C. H. Dowdeswell, Clerk, Land Office, to act as Hospital Superintendent, Mulago	9- 5-33	...	25- 9-33
Mr. J. L. Parker, Assistant Superintendent and Dispenser, to act as Hospital Superintendent, Mulago Hospital ...	26- 9-33	...	25-10-33

Transfer :—

	Date.
Dr. D. Plum, Medical Officer, to Kenya Colony	6- 4-33

Retirements :—

Dr. J. M. Gray, Medical Officer	22- 2-33
Dr. G. R. H. Chell, Deputy Director of Sanitary Service	25-12-33
Miss M. Holliday, Medical Officer	2-12-33

Termination of Appointments :—

Mr. C. M. Day, Assistant Superintendent and Dispenser	22- 5-33
Miss M. M. Francis, Nursing Sister	5- 4-33
Miss B. M. Gill, Nursing Sister	8-10-33
Miss D. S. Coward, Nursing Sister	29-10-33
Miss G. E. Holmes, Nursing Sister	19-11-33

(B) List of Ordinances affecting Public Health, etc., enacted during the year.

10. Midwives (Amendment) Ordinance, 1933.

REGISTRATION OF MEDICAL PRACTITIONERS AND DENTISTS.

11. The Ordinance governing registration came into force on the 1st July, 1913, since when and up to the 31st December, 1933, the following have been placed on the Register :—

Registered Medical Practitioners	170
Registered Medical Practitioner and Dentist	1
Dentists	7
Licensed Medical Practitioners	85

12. The numbers actually on the Registers on the 31st December, 1933, were as follows:—

Registered Medical Practitioners	88
Dentists	7
Licensed Medical Practitioners	36

REGISTRATION OF MIDWIVES.

13. The Ordinance governing registration came into force on the 31st March, 1927, since when and up to the 31st December, 1933, the following have been placed on the Registers:—

Europeans and Asiatics	63
Africans	176

(C) Financial.

14. The expenditure on medical services during the year was £144,156 3s. 17cts., which represents 9·4 per cent. of the total revenue of the Protectorate.

15. The total revenue of the department was £18,054 12s. 88cts.

Section II.

PUBLIC HEALTH.

(A) General Remarks.

16. The European establishment remained unaltered during 1933, but there was a reduction of Sub-Assistant Surgeon posts from 23 to 21. The number of Senior African Medical Assistants rose to 15 whilst the numbers of the nursing orderlies and menial staff were reduced.

17. During the year Dr. G. R. H. Chell, Deputy Director of Sanitary Service since 1923, retired after 25 years' service in East Africa. The loss to the Protectorate of the services of this officer, who has done so much to advance Public Health, will be severely felt.

18. *Returns for the Year.*—The full returns for the year appear in Table F. The table given below compares the year under review with previous years:—

	1928.	*1929.*	*1930.*	*1931.*	*1932.*	*1933.*
New Cases ...	548,163	613,489	642,349	661,349	684,835	743,719
Cases admitted as in-patients to hospitals or dispensaries ...	21,452	25,373	29,063	28,525	24,072	30,185
Total Attendances ...	2,275,725	2,590,394	2,762,948	2,842,769	3,016,851	3,045,074
Surgical Operations ...	2,707	2,563	2,799	3,850	3,514	4,908

19. The percentage of females to the total number of cases attending for treatment in the last five years is set out below:—

1929.	*1930.*	*1931.*	*1932.*	*1933.*
31·8	33·6	37·5	38·3	44·90

The increase must indicate a growth of confidence in European treatment amongst the natives of the Protectorate.

20. Cases by races are set out below:—

	1932.		*1933.*	
	Total Cases.	*Admissions.*	*Total Cases.*	*Admissions.*
European ...	2,647	316	2,416	406
Asiatic ...	7,392	636	7,379	661
African ...	674,796	23,120	733,924	29,118

21. Out of the total of 88 dispensaries listed in 1932 as being in use or under construction, 86 were actually in use. Two were closed during the year so that at the end of 1933 the total number at which patients were being dealt with was 84.

22. *Deaths in Hospital.*—The principal causes of deaths in hospital during the last five years were:—

	1929.	*1930.*	*1931.*	*1932.*	*1933*
Total deaths in hospital ...	1,314	1,356	1,280	1,354	1,357
Pneumonia	294	313	274	279	285
Accidents	142	137	116	115	133
Plague	123	50	19	40	52
Syphilis	63	69	48	41	48
Dysentery	60	21	37	26	25
Malaria	50	80	81	50	57
Tuberculosis	34	44	56	66	66

23. *Sleeping Sickness.*—Two more cases of trypanosomiasis due to *T. rhodesiense*, from Tanganyika Territory, were treated during the year but there was no suggestion of any spread of the disease. Nevertheless, it is disquieting to know that despite every precaution that was taken these two infected persons crossed the border and may possibly form only a small proportion of the total number of infected persons now at large in Uganda. Trypanosomiasis is dealt with at length in Section III.

24. *Typhus Fever.*—As detailed later there were no serious developments of the outbreak reported last year.

25. *Acknowledgments.*—As in former years, this department is under an obligation to Sir Albert Cook, C.M.G., O.B.E., Lady Cook, O.B.E., and the Reverend Mother

Kevin, M.B.E., for the continuance of their valuable work in connection with the training of midwives and maternity and child welfare. Furthermore, as reported by Sir Albert Cook, the first examination for qualified native female nurses was held in Uganda, in May, after the six candidates had completed a three-years' course of training, mostly at Ndeje but partly at Mengo; Dr. Barbara Grinling is to be congratulated on the success of this new development in the education of African women. Dr. R. Y. Stones, as usual, gave his invaluable services in connection with the final examinations of the medical students from Mulago Hospital and Medical School and an excerpt from his letter, commenting on the candidates, has been printed with the report of the Mulago Medical School. The Rev. Mother Kevin, Dr. Sharp and Dr. Hunter carried on their leprosy work at Nyenga, Teso and Kigezi, and during the year a commencement was made by the Rev. Mother Kevin in establishing a large leper colony at Bulaba in Busoga while another in Kyagwe, Buganda, was under consideration; it was anticipated that during 1934 the Bulaba colony would be open to receive lepers of whom, it is estimated, no less than 3,000 live in the Busoga district. Mr. G. W. Bateman, L.D.S., R.C.S. (Eng.), carried out an extremely interesting investigation into the condition of the teeth of school children and this is printed in Section III.

I. GENERAL DISEASES.

26. *Epidemic, Endemic and Infectious Diseases.*—The number of cases and deaths recorded in this group of diseases for the last five years is given below:—

	Total all groups.	*Epidemic, Endemic and Infectious Diseases.*	
	Cases.	*Cases.*	*Deaths.*
1929	584,878	197,643	465
1930	621,920	181,981	426
1931	661,658	193,005	397
1932	684,835	201,062	348
1933	743,719	207,905	423

27. In 1929, the deaths due to diseases of this group formed 35 per cent. of the total deaths recorded. In 1932 the percentage was 25·7 and in 1933 it was 31·2 per cent. The percentage case incidence was 34 in 1929, and for the next three years it was 29 and in 1932 it dropped to 28.

28. *General Diseases.*—There were 51,470 cases recorded, compared with 46,662 in 1932 and 39,869 in 1931. The deaths numbered 43, 27 and 30 for the last three years respectively. The increase in the number of cases appearing in this group is explained almost entirely by the increase in the numbers recorded for myalgia. Only one case of pellagra occurred, the second recorded since the outbreak in 1928.

Five cases of beri-beri and nine of rickets were recorded as compared with one case of each disease last year. Fifty-six cases of cancer were reported as compared with eighty-one last year.

29. *Affections of the Nervous System and Organs of Sense.*—The number in this group was greater than last year, 65,714 as compared with 59,555. The increase was accounted for mainly by the cases of conjunctivitis being 31,410 as contrasted with 26,334 in 1932. In general there were more cases treated of affections of the organs of vision and the ear than in previous years. There were 59 deaths recorded under this group, 32 being due to meningitis, compared with 48 in 1932.

30. *Affections of the Circulatory System.*—3,781 new cases were recorded with 36 deaths in hospital, compared with 3,532 cases and 48 deaths in 1932.

31. *Affections of the Respiratory System.*—An increase occurred in the number of cases recorded in this group, there was a corresponding increase in the number of cases of pneumonia. The following table shows the comparative figures for the last three years:—

	1931.		*1932.*		*1933.*	
	Cases.	*Deaths.*	*Cases.*	*Deaths.*	*Cases.*	*Deaths.*
Total group ...	83,172	290	89,717	296	93,314	312
Pneumonia ...	2,802	274	3,482	279	3,809	285

32. *Diseases of the Digestive System.*—The number increased from 88,925 with 116 deaths in 1932 to 93,866 with 110 deaths in 1933.

33. *Diseases of the Genito-Urinary System.*—An increase was recorded from 3,277 cases with 45 deaths in 1932 to 3,726 cases with 46 deaths in 1933. The increased attendance of women in this group noted last year was continued during 1933, the figures for the last three years being 1,093, 1,482 and 1,690.

34. *Puerperal State, Diseases of Infancy, Maternity and Child Welfare.*—The table appearing below shows the variation in the number of new cases during the last five years:—

	1929.	*1930.*	*1931.*	*1932.*	*1933*
Women who attended for ante-natal supervision	954	2,753	3,760	7,254	12,110
Women who attended for diseases connected with the puerperal state	874	997	993	1,356	2,050
Babies who attended Child Welfare Clinics	278	544	640	1,264	1,916
Sick babies brought to hospital for out-patient treatment	323	340	289	223	410
Women admitted to hospital for child-birth	318	472	620	786	853
Normal babies born in hospital	231	472	591	758	822

35. More than last year the above figures reflect the growing popularity amongst native women of the facilities provided for the care and attention of themselves during pregnancy and labour and of their babies during infancy. Considerably more attention was paid to maternal and child welfare work during the past year and it is anticipated that the results of this work will be apparent next year.

36. *Affections of the Skin and Cellular Tissue.*—The number of the new cases who presented themselves for treatment rose from 97,683 cases with 56 deaths in 1932, to 111,413 with 63 deaths in 1933. The number of cases of scabies dealt with, 37,412, compared with 27,734 in 1932, largely accounted for this rise.

37. *Diseases of the Bones and Organs of Locomotion.*—There were 3,183 cases in 1933 and 2,878 cases in 1932.

38. *Malformations.*—Only ten cases were recorded.

39. *Diseases of Old Age.*—Twenty-nine cases were recorded.

40. *Affections Produced by External Causes.*—88,572 cases attended for treatment compared with 76,312 in 1932.

41. *Ill-defined Diseases.*—1,404 cases were placed in this group as compared with 904 cases in 1932. The increase is accounted for by no cases having been dealt with under the heading of "not diagnosed."

42. The percentage incidence of groups of diseases for the last eight years is given below:—

	1926.	*1927.*	*1928.*	*1929.*	*1930.*	*1931.*	*1932.*	*1933.*
Epidemic, Endemic and Infectious	29·5	30·9	33·2	33·6	29·3	29·2	29·4	28·0
General	4·9	4·2	4·0	5·3	5·5	6·0	6·8	7·0
Nervous System	8·6	9·6	9·1	8·4	8·6	9·2	8·7	8·8
Respiratory System	14·1	12·4	13·6	14·5	14·9	12·6	13·1	12·5
Digestive System	13·9	13·7	13·4	13·3	12·9	13·2	13·0	12·6
Skin and Cellular Tissue	12·8	14·5	11·0	10·7	14·0	16·5	14·3	15·0
External Causes	11·3	10·9	10·5	12·1	12·3	11·0	11·1	12·0
Others	4·3	3·8	5·2	2·1	2·5	2·3	3·6	4·1

(II) COMMUNICABLE DISEASES.

(*a*) Mosquito or Insect-Borne.

I. GENERAL.

Trypanosomiasis.—

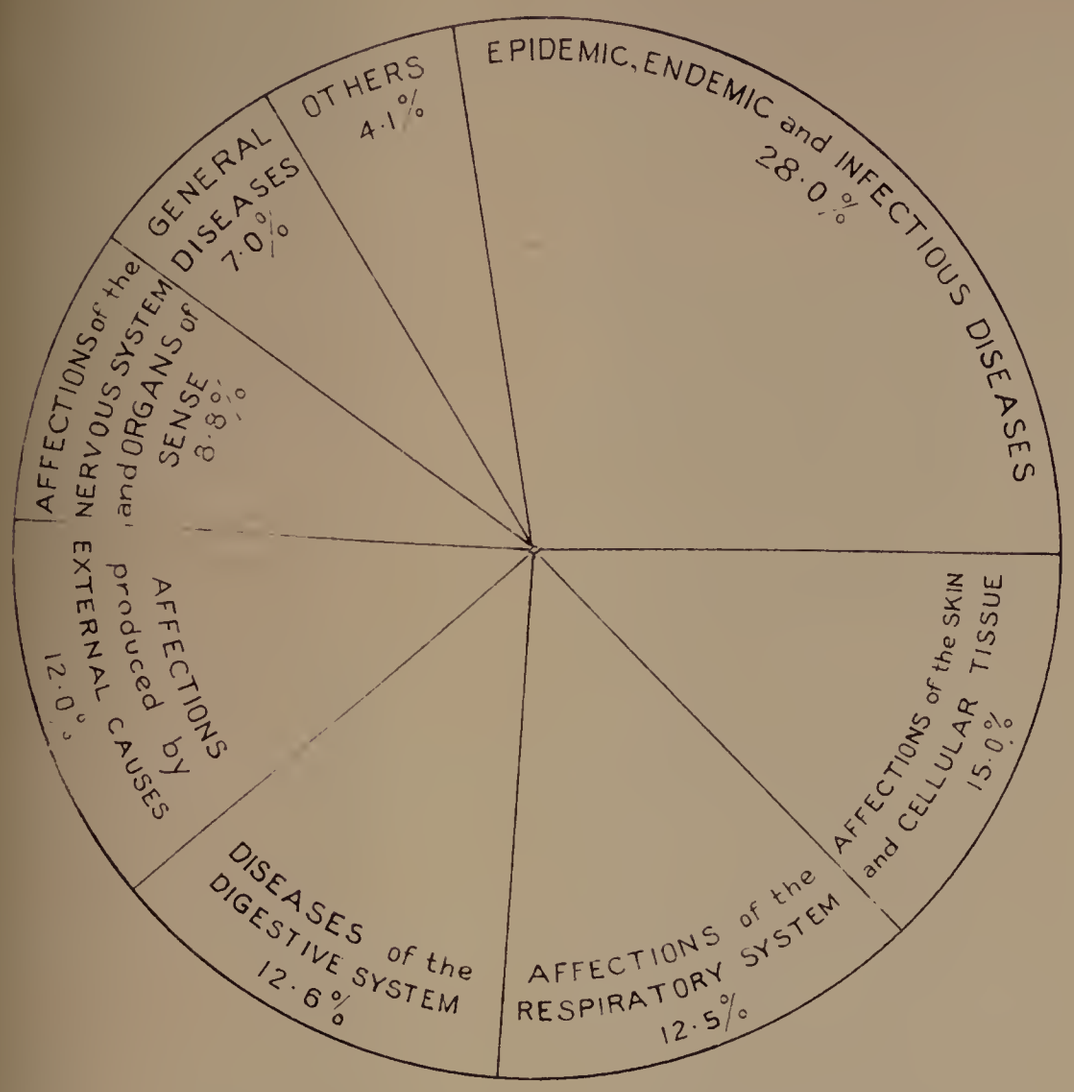
43. The incidence and mortality from trypanosomiasis during the past 29 years is summarised in the following table:—

Year.	*Reported Deaths.*	*Year.*	*Reported Deaths.*	*Year.*	*Reported Deaths.*	*New Cases.*
1905	8,003	1915	352	1925	209	153
1906	6,522	1916	209	1926	123	372
1907	4,175	1917	229	1927	79	283
1908	3,662	1918	235	1928	67	656
1909	7,782	1919	109	1929	78	1,572
1910	1,546	1920	69	1930	51	638
1911	1,487	1921	32	1931	117	471
1912	932	1922	31	1932	85	536
1913	708	1923	16	1933	109	693
1914	466	1924	194			

44. The distribution of new cases in 1933 was as follows:—

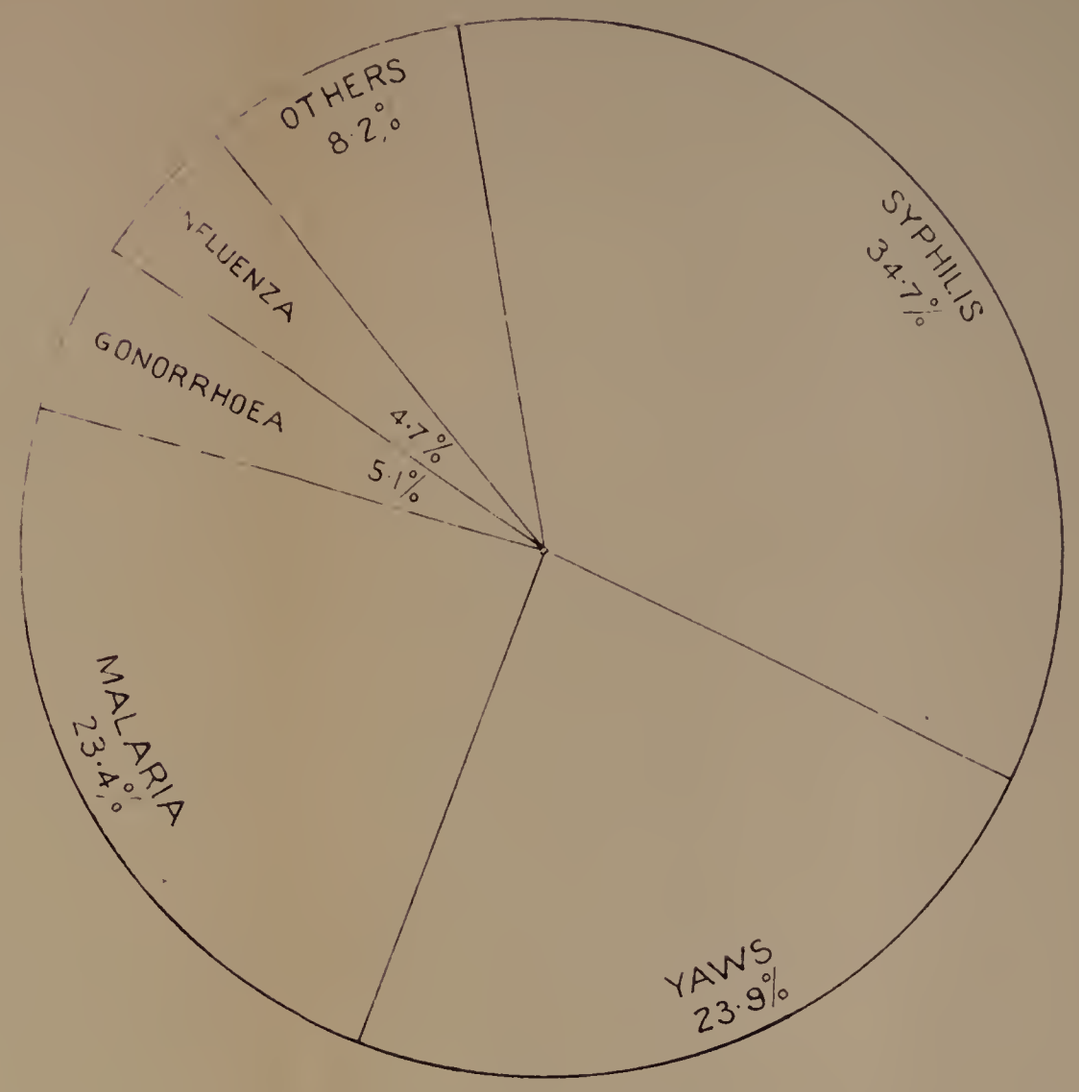
	1932.	*1933.*		*1932.*	*1933.*
West Nile	317	495	Victoria Nyanza area	11	14
Gulu	35	31	Lake Edward—George area	144	130
Chua	29	23			

THE PROPORTION OF EPIDEMIC, ENDEMIC, INFECTIOUS, SYSTEMIC AND OTHER DISEASES SHOWN AS PERCENTAGES OF TOTAL CASES

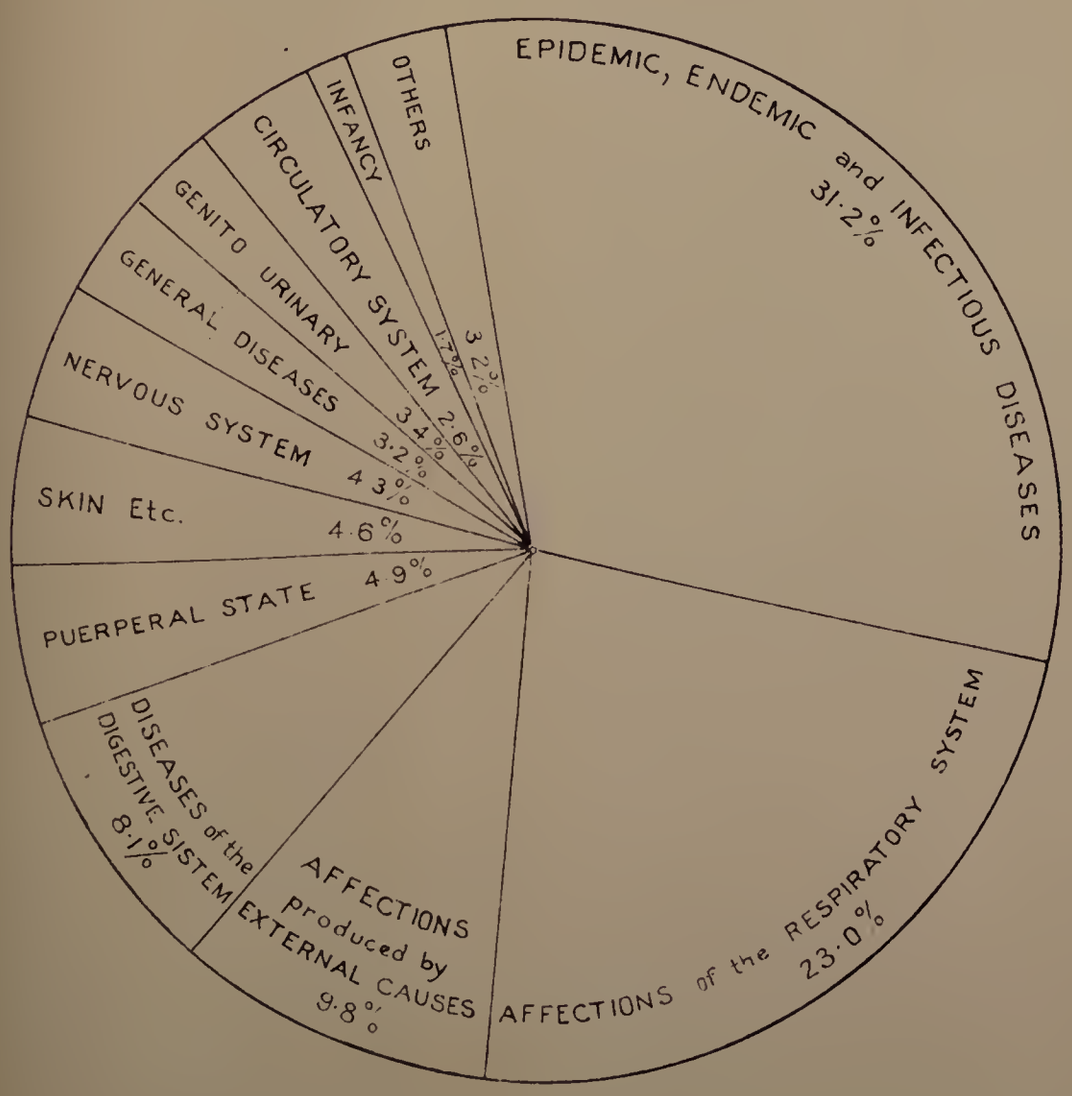


TOTAL INCIDENCE:— 743,719

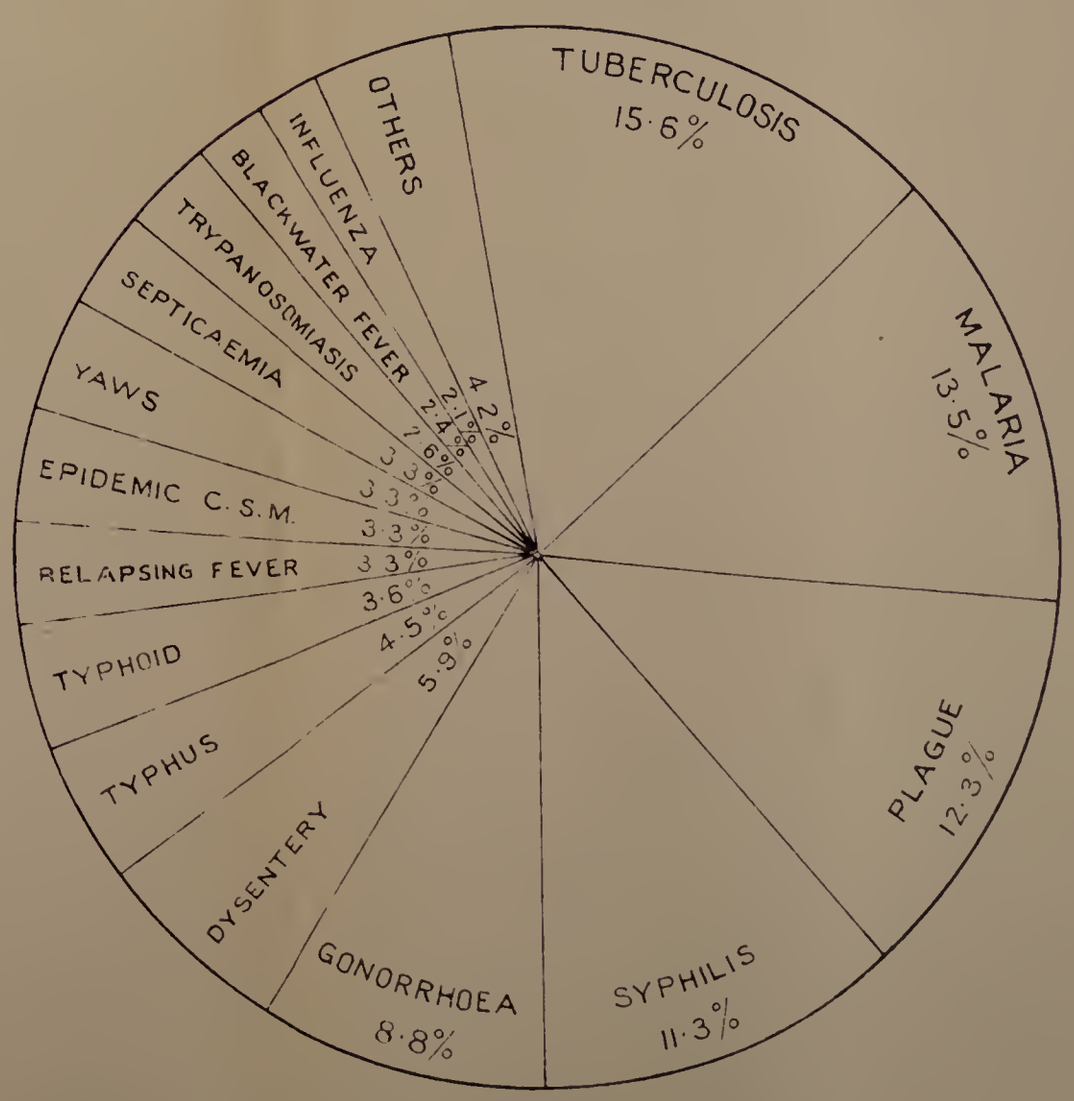
THE PROPORTION OF EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES



TOTAL INCIDENCE:— 207,905



TOTAL DEATHS:— 1,357



TOTAL DEATHS:— 423

45. The total number of new cases of trypanosomiasis treated in the Protectorate increased during 1933 because of the increase in the number of new cases reported from the West Nile Sleeping Sickness Areas. The reasons for this increase are discussed in paragraph 138. All reported cases of trypanosomiasis were of the *T. gambiense* variety except for the two imported cases of *T. rhodesiense* infection dealt with in the Masaka District.

46. The number of deaths reported as having been due to sleeping sickness were eleven in hospitals and 98 in the districts. The cause of deaths reported from the districts cannot be regarded as accurate since no post-mortems were performed and the records were maintained only by chiefs. Still, the figures may be said to bear out the general impressions of medical officers that trypanosomiasis in Uganda is not, at the moment, of a virulent type. This can be seen also from the figures reported for the Lake Edward—George area where no deaths were reported amongst 130 new cases and only three deaths occurred in 1932 amongst 144 new cases. This area is relatively small, and the people have been under closer supervision than anywhere else in the country, so that any deaths amongst persons suffering from trypanosomiasis would have been recorded. Furthermore, a total of 191 cases were treated in various hospitals, and it may be presumed that all, or most, were advanced cases, but only eleven deaths occurred—a case mortality of 5·8 per cent. In the West Nile District the case mortality was only 1·41 per cent. although it is probable that some of the deaths attributed to trypanosomiasis were really due to some other disease.

47. The following notes set out the position regarding the incidence of trypanosomiasis in the sleeping sickness areas of Uganda at the end of 1933 :—

(i) *West Nile Sleeping Sickness Area.*—

48. The incidence of trypanosomiasis during the last six years in the West Nile District amongst a population of 250,427 is shown as follows :—

	1928.	*1929.*	*1930.*		*1931.*		*1932.*		*1933.*	
	New.	*New.*	*New.*	*Old.*	*New.*	*Old.*	*New.*	*Old.*	*New.*	*Old.*
Cases treated in Arua and Sub-dispensaries	335	224	189	32	59	—	29	14	48	30
Cases treated in Aringa and Sub-dispensaries ...	411	943	349	199	326	63	264	59	404	93
Cases treated at Junam Sub-dispensaries	53	379	39	—	48	108	24	8	43	36
TOTAL ...	799	1,546	577	231	433	171	317	81	495	159

49. The number of new and old cases who received treatment during the year rose because of more intensive methods of supervision. More attention was paid to following up and completing the treatment of old cases who had ceased to attend dispensaries, and frequently this involved the discovery of other cases. Furthermore, so far as it was practicable to do so, the homes and surroundings of all new cases were investigated, all the inhabitants of the area were closely examined and possible foci of infection inspected and dealt with. This method of control appears to have been of more value than the mass examinations of the people carried out by medical officers in former years.

50. The present position with regard to trypanosomiasis in the West Nile District gives no immediate cause for alarm, but the situation is fraught with serious possibilities. Despite all efforts it is certain that large numbers of people are in daily contact with *G. palpalis*, because instead of using the cleared watering places they often prefer to draw cool water from those which are shaded and uncleared. Frequently, when herding goats or cattle, they penetrate to uncleared river banks and sometimes in the course of hunting or fishing they deliberately frequent places which are definitely closed and which are infested with *G. palpalis*. Clearings are being extended and the partial debushing of some rivers is contemplated, but both clearings and debushing will require to be extended and maintained adequately before trypanosomiasis can be reduced to proportions which do not constitute a grave potential danger to the health of the people.

51. Seventy deaths were attributed to trypanosomiasis but, as explained in the Annual Report for 1932, all reported deaths must be accepted with reserve. It is probable that this figure is not unduly low since the virulence of the causative

trypanosome is low in this area and the people appear to have acquired a degree of tolerance to it. This latter hypothesis is borne out by the death rate of the West Nile District being the lowest of any district in the Protectorate, although it contains by far the largest proportion of persons harbouring *T. gambiense.*

52. The European staff remained unaltered during the year but the African staff was reduced, although treatment for trypanosomiasis was given at nine centres as in past years and nine sleeping sickness inspection posts were maintained.

(ii) *Gulu Sleeping Sickness Area.—*

53. The incidence of trypanosomiasis in the Gulu Sleeping Sickness Area, which includes East and West Madi, amongst a population of 101,060 during the last eight years was :—

	1926	*1927*	*1928*	*1929*	*1930.* *New.* *Old.*	*1931.* *New.* *Old.*	*1932.* *New.* *Old.*	*1933.* *New.* *Old.*
Cases seen at Gulu and Dispensaries (Acholiland)	—	—	116	84	14 ... 25	12 ... 71	14 ... 25	9 ... 26
Cases seen at Moyo and Dispensaries (Madi) ...	239	167	36	36	32 ...370	32 ... 94	21 ...387	22 ...314
TOTAL ...	239	167	152	120	46 ...395	44 ...165	35 ...412	31 ...340

54. The whole area was toured on several occasions during the year and the people examined. In the opinion of the District Medical Officer, sleeping sickness in this area is well in hand but, as elsewhere, conditions favourable to the spread of the disease continue to exist in certain places, and, if a fresh infection were introduced, it is probable that an increase in the number of new cases would result.

55. Thirty-three people are said to have died from trypanosomiasis and, in view of the numbers of cases dealt with in past years, this figure is considered to be approximately correct.

56. European staff shortage necessitated the transfer of the Medical Officer, Moyo, to Arua, and Madi Sub-district was transferred to Gulu District. The District Medical Officer, Gulu, assumed charge of the area and a Senior African Medical Assistant was posted at Moyo.

(iii) *Chua Sleeping Sickness Area.—*

57. During the last six years the incidence of trypanosomiasis amongst 82,574 people in the Chua District was :—

	1928	*1929*	*1930* *New* *Old.*	*1931* *New* *Old.*	*1932* *New* *Old.*	*1933* *New* *Old.*
Cases seen at the Kitgum hospital and Dispensaries	19	39	3 ... 11	11 ... 3	29 ... 18	22 ... 21

58. There was little change in the numbers during 1933, except that a few cases were reported from gombololas which normally were not inspected as a routine every six months. They will be inspected in future, although it is probable the cases originated from one of the known possible sources of infection. One European, a Public Works Department Foreman employed on bridge building at the Pader River, contracted trypanosomiasis but responded satisfactorily to treatment.

59. No medical officer was available for posting to Kitgum for the latter part of the year and a sub-assistant surgeon was in charge during this period under the general supervision of the District Medical Officer, Gulu District.

60. Only one death is attributed to sleeping sickness—this was an advanced nerve case who had been admitted to Kitgum hospital.

(iv) *Victoria Nyanza—Nile Sleeping Sickness Area.—*

61. The incidence of trypanosomiasis in this area during the last four years was :—

	1930 *New* *Old.*	*1931* *New* *Old.*	*1932* *New* *Old.*	*1933* *New* *Old.*
Cases	5 ... 2	5 ... 2	7 ... —	14 ... 3

62. One case was diagnosed and treated at Tororo hospital—it is reported that the infection had been contracted in Kenya. Four cases were reported from Busoga, two were Kavirondo natives who had recently arrived from Kenya Colony; the third case, a Musoga, had resided recently in an infected area of Kenya and presumably had acquired his infection there. One Musoga was found at Kamuli to have trypanosomes in his blood and he was said to have lived all his life at Namasagali or Mbulamuti—he was unable to give any coherent account of himself and it may be that his infection was acquired elsewhere.

63. Two cases of *T. rhodesiense* infection were diagnosed at Masaka hospital, both were natives of Tanganyika; one was a Muzinga from Biharamulo and the other a Munyaruanda from near Kibondo.

64. Seven cases were seen at Mulago Hospital in Kampala. All were natives of the Lake Edward—George Sleeping Sickness Area or of the Madi District.

(v) *The Lake Edward—George Sleeping Sickness Area.*—

65. The incidence of trypanosomiasis was as follows amongst a population of 195,419 people living in the Toro District:—

	1931 New	1931 Old.	1932 New	1932 Old.	1933 New	1933 Old.
Cases seen at Fort Portal and Dispensaries ...	31	—	144	9	130	18

66. All the above cases came from the infected areas of Busongora, in the south of the Toro District, adjacent to the Belgian Congo. Most of the cases were treated at the two sub-dispensaries in the area. An endeavour was made to examine the population of the infected areas and neighbouring counties on several occasions, and a medical officer was posted to the district for this duty over a period of three months. At most of the examinations of people carried out by medical officers it was found that the numbers presenting themselves bore no relation to the numbers that might have been expected from calculations based on the numbers of the adult poll-tax payers. It was thought that possibly 40 per cent. of the total were inspected and probably a greater percentage of Congo immigrants. The apathetic attitude adopted towards the outbreaks by the local people, strengthened by the fact that the infection was not of a virulent type, rendered impossible the satisfactory determination of the real position. The opinion of the investigating medical officer was that sleeping sickness had gained a footing in Busongora and that sporadic outbreaks were to be expected in the future, although during 1933 most of the cases seen were either Congolese or people who had visited the infected areas of the Belgian Congo in the recent past.

67. *Plague.*—The numbers of cases and deaths reported, 858 and 833 respectively, were slightly less than those for 1932 and they were less than those reported for any of the previous eight years. Plague nowhere assumed formidable proportions, and even in Mengo District, where two-thirds of the total cases and deaths occurred, the Senior Health Officer reported that the outbreaks were widely separated and nothing in the nature of an epidemic had been observed.

68. Twelve cases of plague amongst Asiatics were seen and all of them died. Two European members of the Mill Hill Mission contracted plague as a consequence of nursing or ministering to Africans who were suffering from plague.

69. As in previous years, all the Eastern Province districts were infected with plague except Bubulu. In the Northern Province, only Lango was affected, whilst the Western Province was free. In all the Buganda districts plague occurred, though the heaviest infection rates were in Mengo and Entebbe.

70. The following tables set out the details of the distribution of plague cases and the deaths which occurred during the last 24 years:—

71. TABLE I.—DEATHS REPORTED FROM PLAGUE SINCE 1910.

Year.	Deaths.	Year.	Deaths.	Year.	Deaths.	Year.	Deaths
1910 ...	3,623	1916 ...	4,384	1922 ...	1,305	1928 ...	1,174
1911 ...	3,734	1917 ...	4,031	1923 ...	914	1929 ...	5,118
1912 ...	3,100	1918 ...	2,493	1924 ...	810	1930 ...	2,370
1913 ...	3,292	1919 ...	1,022	1925 ...	869	1931 ...	2,299
1914 ...	3,725	1920 ...	1,732	1926 ...	1,589	1932 ...	990
1915 ...	4,028	1921 ...	5,871	1927 ...	1,863	1933 ...	833
						TOTAL ...	61,169

72. TABLE II.—DISTRIBUTION OF PLAGUE CASES BY DISTRICTS.

	Cases.	Deaths.
Eastern Province:—		
Busoga	18	17
Bugwere	45	45
Budama	63	50
TOTAL	126	112
Buganda Province:—		
Mengo	*587	577
Entebbe	94	93
Mubende	1	1
Masaka	18	18
TOTAL	700	689
Northern Province:—		
Lango	32	32

*Four cases and four deaths in Kampala.

73. *Relapsing Fever.*—The incidence of relapsing fever differed very little from 1932, the figures being 1,387 cases with fourteen deaths as compared with 1,336 and nineteen deaths. The number of cases returned year by year since 1925 is set out below:—

Year.	Cases.	Year.	Cases.	Year.	Cases.
1925	659	1928	2,494	1931	871
1926	1,507	1929	1,879	1932	1,336
1927	2,000	1930	884	1933	1,387

74. The distribution of the disease throughout the districts for the last three years is as follows:—

	1931.	1932.	1933.
Western Province:—			
Toro	30	17	28
Kigezi	78	101	46
Ankole	392	503	856
Buganda Province:—			
Masaka	145	477	323
Mubende	174	120	94
Entebbe	11	7	7
Mengo	35	88	24
Northern Province:—			
Bunyoro	1	13	5
Eastern Province:—			
Busoga	5	10	3
Soroti	—	—	1
TOTAL	871	1,336	1,387

75. As might be expected, the largest number of cases were reported from the districts known to be heavily infested with *O. moubata* and traversed by non-immune immigrants from the Congo and Tanganyika Territory. The immigrants pass mostly through Ankole and Masaka Districts and give rise to the majority of the cases because the local Banyankole and Baganda seldom appear at hospitals or sub-dispensaries complaining of illness due to relapsing fever, and it may be presumed that they have established a degree of immunity to the disease.

76. There is no evidence to show that immigration increased during 1933 and the increased numbers of cases diagnosed must be attributed to the growing familiarity with the disease on the part of medical orderlies in charge of sub-dispensaries and the increasing willingness of immigrants to take advantage of the medical facilities available during their migration.

77. *Malaria.*—A slight increase was observed in the number of cases dealt with compared with 1932, the figures being respectively 48,702 cases and 57 deaths

and 47,950 cases with 50 deaths. The distribution by types of disease and Provinces is set out below :—

	Buganda Province.		Eastern Province.		Western Province.		Northern Province.		Total.	
	1932.	*1933.*	*1932.*	*1933.*	*1932.*	*1933.*	*1932.*	*1933.*	*1932.*	*1933.*
Tertian Malaria ...	495	368	123	276	374	330	105	112	1,097	1,084
Quartan Malaria ...	186	214	53	53	3	242	85	320	327	805
Aestivo Autumnal	2,669	2,402	895	1,283	1,218	1,051	716	1,353	5,498	6,045
Clinical Malaria ...	15,702	13,834	9,583	13,230	7,388	6,715	7,684	6,537	40,357	39,981
Mixed Infections	207	90	8	8	124	167	25	12	364	277
Malarial Cachexia	4	2	11	11	62	78	230	14	307	105
TOTALS ...	19,263	16,910	10,673	14,861	9,169	8,583	8,845	8,348	47,950	48,702

78. The figures submitted for the Western and Northern Provinces show only slight variation compared with past years whereas the figures for Buganda fell slightly and the Eastern Province figures rose by approximately 40 per cent. as can be seen from the following table. This increase was due mainly to the larger numbers who were treated for clinical malaria in all of the Eastern Province districts; most of these cases were reported from sub-dispensaries.

	Jinja and Namasagali.		Mbale.		Tororo.		Soroti.		Moroto.	
	1932.	*1933.*	*1932.*	*1933.*	*1932.*	*1933.*	*1932.*	*1933.*	*1932.*	*1933.*
Tertian Malaria ...	113	208	9	11	—	30	—	24	1	3
Quartan Malaria ...	43	13	3	6	2	17	4	17	1	—
Aestivo Autumnal	495	785	91	97	121	343	187	58	1	—
Clinical Malaria ...	3,032	4,229	3,189	5,118	731	812	2,566	2,959	65	112
Mixed infection ...	7	8	2	—	—	—	—	—	—	—
Malarial Cachexia	9	5	—	6	—	—	—	—	—	—
TOTALS ...	3,699	5,248	3,295	5,238	854	1,202	2,757	3,058	68	115

79. There is no evidence that any epidemic of malaria occurred in the Eastern Province, indeed no District Medical Officer reported any undue prevalence of malaria in his district, and the rise in the number may be attributed to the growing willingness of the peasantry to make more use of the dispensaries in country districts. This supposition is borne out by the fact, that, although throughout the whole Protectorate the ratio between the number of cases of malaria and other diseases was less than in former years, yet the ratio rose in the Eastern Province. It is possible that this may indicate that the people of those malarious areas have profited by the propaganda of medical and administrative officers, or an alternative explanation may be of course that the designation "clinical malaria" forms a convenient classification for undiagnosed febrile conditions which really are not due to malaria.

Blackwater Fever.—

80. The total number of cases of blackwater fever reported from all sources was 146 with 41 deaths, compared with 125 and 40 deaths in 1932. Thirty cases were admitted to Government hospitals of whom ten died. A total of 88 cases were treated by Government Medical Officers.

81. The case incidence, mortality and fatality rates for this disease for the last 21 years are set out in Table III, in approximately quinquennial periods, and the figures for 1933 have been added below. The case incidence amongst Asiatics varies little from the figures for recent years whilst the European figures show a decrease, but the figures dealt with amongst the latter, during one year, are so small as to render the calculated rates of little significance. The mortality and percentage fatality rates for Asiatics show an increase, but again, although a decrease of both rates is recorded, the European figures are too small to warrant any conclusions. Cases of blackwater fever amongst Africans have not been included in the table, but up till 1933 there were 29 cases amongst local Africans with five deaths, together with six cases and one death amongst Seychelles natives and one West African case. During 1933, three cases occurred in natives of the Protectorate with no deaths.

Table III.—Case Incidence, Mortality and Fatality Rates of Blackwater Fever from 1912 to 1933.

	Yearly average Population.			Cases of Blackwater Fever during the period.			Deaths from Blackwater Fever during the period.			Case incidence per 1,000 population.			Mortality Rate per 1,000 population.			Percentage Fatality Rate.		
	European.	Asiatic	Total.	European.	Asiatic.	Total.	European.	Asiatic.	Total.	European.	Asiatic.	Total.	European.	Asiatic.	Total.	European.	Asiatic.	Total.
1912—1917	859	3,257	4,116	69 *a*	211 *a*	345	24 *a*	42 *a*	84	16·23 *c*	13·20 *c*	13·97	5·64 *c*	2·63 *c*	3·40	34·78	19·91	24·35
1918—1922	1,357	4,716	6,073	63 *b*	214 *b*	317	17 *b*	40 *b*	64	13·53 *d*	10·64 *d*	10·93	3·65 *d*	1·99 *d*	2·21	26·98	18·69	20·20
1923—1927	1,614	9,221	10,345	72	421	493	16	120	136	8·92	9·13	9·10	1·98	2·60	2·51	22·22	28·50	27·59
1928—1932	1,990	13,337	15,327	70	612	682	14	159	173	7·04	9·18	8·90	1·41	2·38	2·26	20·00	25·98	25·37
Total Period	1,362	7,424	8,786	274 *a b*	1,468 *a b*	1,837	71 *a b*	361 *a b*	457	10·18 *cd*	9·86 *cd*	9·96	2·64 *cd*	2·42 *cd*	2·48	25·91	24·52	24·88
1933 ...	1,811 *f*	14,061 *f*	15,872	7	136	143	1	40	41	3·86	9·67	9·01	0·55	2·84	2·58	14·28	29·41	28·67

a Cases for 1915 not differentiated and omitted.
b Cases for 1918 not differentiated and omitted.
c Population and cases for 1915 omitted in calculation.
d Population and cases for 1918 omitted in calculation.
f Figures from 1932 Blue Book.

83. The incidence of blackwater fever by Provinces and stations is shown below in Table IV over a six-year period:—

TABLE IV.

	1928.	1929.	1930.	1931.	1932.	1933.
Buganda Province:—						
Kampala	52	39	29	35	34	43
Masaka	—	2	—	1	3	4
Entebbe	2	1	5	2	3	1
Bombo	7	—	—	—	—	—
Mulago	—	2	—	1	2	3
Lugazi	—	—	—	5	4	8
District	—	—	—	7	—	—
Northern Province:—						
Arua	1	1	7	2	1	1
Hoima	2	—	2	—	2	2
Masindi	9	1	3	3	—	1
Masindi Port	—	—	—	- -	—	1
Gulu	2	1	1	7	2	1
Kitgum	—	1	1	1	2	1
Butiaba	3	1	—	—	1	—
Moyo	2	—	—	—	1	—
Lira	5	10	13	8	5	3
Kaberamaido	—	—	—	—	—	3
Aduku	—	—	—	—	—	2
Eastern Province:—						
Jinja	38	13	21	11	17	10
Mbale	17	12	11	13	10	14
Tororo	5	12	2	12	5	14
Soroti	9	14	8	8	9	9
Namasagali	—	6	6	5	5	11
Kaliro	—	—	6	—	2	—
Iganga	—	—	2	3	—	—
Ngora	—	—	2	5	9	3
Kamuli	—	—	—	—	5	7
Nagongera	—	—	—	—	2	1
District	—	—	6	16	—	1
Western Province:—						
Mbarara	1	1	5	1	1	—
Fort Portal	2	—	—	3	—	2
District	—	—	5	1	—	—

84. The case incidence of blackwater fever by provinces is shown in Table V and, as in past years, the disease has a relatively more frequent occurrence in the Eastern and Northern Provinces.

TABLE V.—BLACKWATER FEVER.

	1929.		1930.		1931.		1932.		1933.		1929—1933.
	Population—Asiatics and Europeans.	Incidence of B.W.F. per 1,000.	Population—Asiatics and Europeans.	Incidence of B.W.F. per 1,000.	Population—Asiatics and Europeans.	Incidence of B.W.F. per 1,000.	Population—Asiatics and Europeans.	Incidence of B.W.F. per 1,000.	Population—Asiatics and Europeans.	Incidence of B.W.F. per 1,000.	Average incidence per 1,000 over five years.
Buganda Province	6,590	6·1	6,886	4·9	8,522	5·9	7,746	5·9	Population taken as that for 1932.	7·6	6·1
Eastern Province	5,897	9·6	7,080	8·8	5,301	13·7	5,698	11·2		12·3	9·1
Northern Province	1,346	11·1	1,215	22·1	1,500	14·0	1,623	8·6		9·2	13·0
Western Province	704	1·4	804	12·3	827	4·7	805	1·2		2·5	4·4

85. The incidence was greatest during and immediately after the periods of maximum rainfall. There were 31 cases amongst Asiatic females and there was one European female case. Of the total cases, two were European Government officials and one was an Asiatic official.

86. *Typhus Fever.*—Further bacteriological investigations of the strains of typhus isolated last year from patients in Kabale hospital, in Kigezi, gave conclusive

evidence of the nature of the infection and the following results were obtained from the two strains tested :—

(i) The Byengenguru strain of typhus was passed through five guinea pigs and the brain of the fifth animal was emulsified and injected intraperitoneally into a rabbit (R.1) and a guinea pig (G.32). G.32 developed a typical infection, while the serum of R.1 gave the following reaction when tested for 0×19 agglutinins :—

Time in weeks.		*Titre.*	
0	...	0	= No agglutination in 1/5 dilution.
1	...	0	
2	...	1/5	
3	...	1/10	
4	...	1/5	
5	...	0	
6	...	0	

(ii) The Tibakoba strain, after four guinea pig passages, was also inoculated into a rabbit (R.2). The serum of this animal reacted as follows with a suspension of 0×19 :—

Time in weeks.		*Titre.*	
0	...	0	= No agglutination in 1/5 dilution.
1	...	0	
2	...	1/10	
3	...	1/40	
4	...	1/10	
5	...	1/10	
6	...	1/5	

87. The number of new cases treated rose to 140 with nineteen deaths compared with 120 and nine deaths in 1932. Eight cases amongst immigrant labourers were treated at Mulago hospital and two at Mbarara. All the remainder were treated in hospital at Kabale and all the deaths occurred at Kabale. The District Medical Officer, Kigezi, did not report any epidemic during the year and no cases of typhus were recognised at any sub-dispensary. It appears that typhus was endemic in the Kabale area during the year but it had not spread to any serious extent, possibly because of the scarcity of non-immune persons. All these people harbour lice and most of them may be presumed to have suffered from typhus since many of the lice caught on people in good health were proved infective.

(*b*) Infectious Diseases.

88. *Epidemic Cerebro-Spinal Meningitis.*—Eighty-two cases were seen at hospitals and sub-dispensaries during the year, of whom fourteen died, compared with 235 and 24 deaths in 1932. Sporadic cases occurred in Gulu, Mulago, Bombo, Masaka and Mbale but the majority were reported from the hospitals at Mbarara (49) and Kigezi (29). The Mbarara hospital cases were admitted in consequence of an epidemic of the disease which was first reported in October from the Mwirasandu mine in the southern part of Mbarara District and became widespread in the vicinity. Altogether, 270 additional cases with 107 deaths were known to have occurred outside hospitals and dispensaries by the end of the year, the peak of the epidemic being reached during one week of December when 90 cases were reported. During November, cases spread into that part of the Kigezi District which abuts on Ankole and notifications were still being received at the end of December. A total of 33 cases were seen in that district but no deaths were reported.

89. *Encephalitis Lethargica.*—Six new cases amongst Africans with four deaths were reported, four from the Kigezi District, one from Mbale and one from Lira. Thirteen cases occurred during 1932.

90. *Dysentery.*—There were 3,117 cases and 25 deaths reported during the year compared with 2,655 cases and 26 deaths during the previous year. Almost half of the cases were treated at dispensaries in the Northern Province and were recorded as "undefined or due to other causes," *i.e.*, not due to a specific cause that could be demonstrated.

91. *Influenza.*—Less cases were reported than in 1932, the figures were 15,144 and 9,688 respectively.

Half of the cases came from Buganda Province and most of them occurred in Mengo District and were notified from Mulago and Kampala hospitals. The disease was of a mild type and appeared to be seasonal in character, the greater number of cases having been seen during June and July. Elsewhere, cases were reported but no epidemic occurred; it may be that the designation "influenza" was made to include a certain number of cases of undiagnosed fevers which were not really due to influenza.

92. *Leprosy.*—The demands for leprosy relief are becoming so great that it is impossible to satisfy them from the sum of money which is set aside for this purpose in the Protectorate Estimates. The survey which was carried out in 1931 revealed the great extent of the disease in various districts of the Protectorate and it is obvious that one of two things must happen : either an enormously increased provision must be made in Protectorate funds to deal with the disease or the organisation for the relief of leprosy must be developed upon lines which differ from those of the past. With the Protectorate revenues in their present position, it is impossible to consider the provision of any larger grant. Difficulty has arisen in the past because an enthusiast, usually a Mission worker, filled with compassion for the sufferings of these unfortunates, has commenced a leper colony and then turned to the Protectorate Government and asked for assistance. At the meeting of the British Empire Leprosy Relief Association, Uganda Branch, which was held in June, the policy was adopted that each Native Government should hold itself reponsible for the care and maintenance of the lepers in its own district. The colony system of treating leprosy, so successful in Dr. Sharp's hands in Kigezi, was recommended as that most suitable for the greater part of the Protectorate, and at the meeting in June the Native Governments undertook that when the proposal to establish a colony had been approved both by them and by the Medical Department they would erect and maintain the necessary buildings and provide maintenance for the lepers until the leper family had had time enough to put sufficient land under cultivation to maintain themselves, a period estimated at six to twelve months. The Mission representatives promised that, for their part, they would arrange the supervision of such colonies, while the call on the Medical Department would be limited to the provision of drugs and to periodical visits by a medical officer.

93. There was a slight increase in the number of lepers seen at Government hospitals—the total for 1933 was 2,227 compared with 2,174 in 1932. At the Church Missionary Society's Leper Colony at Kabale the number of patients rose from 275 to 474. 140 leper in-patients and 240 out-patients were treated at the Nyenga Leper Hospital, by the Franciscan Sisters, and large numbers of leper children were dealt with at the Church Missionary Society's Leper Hospital at Kumi.

94. Towards the end of the year a start was made by the Franciscan Sisters, under Mother Kevin, to establish a leper colony at Bulaba, in Busoga; by the end of the year an approved building programme had been put in hand and it was hoped to occupy the site early in 1934. The proposal was that the colony should be made sufficiently large to accommodate all the Busoga lepers, approximately 3,000, in a colony which should be to a large extent self-supporting.

95. Treatment for lepers was given at all Government hospitals and dispensaries but almost all medical officers who had treated lepers during the year reported that the results of treatment had been very discouraging. In this connection, Dr. Leonard Sharp, of the Church Missionary Society, working amongst lepers in the Kigezi District reported that after studying the results of treatment of a series of cases "the figures appear to suggest that no considerable improvement can be attributed to the use of *Hydnocarpus* preparations in the treatment of leprosy." He obtains good results merely by placing lepers in good hygienic conditions and providing them with good food.

96. Arrangements were made to have selected groups of lepers treated at Government hospitals with brilliant green and crystal violet, but not enough cases had been treated by the end of the year to allow of any opinion being expressed as to the value of these drugs in the treatment of lepers in Uganda, but indications were not wanting that this line of treatment might be productive of better results than the use of *Hydnocarpus* preparations.

97. *Typhoid Fever.*—Forty-three new cases of typhoid, paratyphoid B and "diseases of the enteric group" with sixteen deaths were reported by Government medical officers. No reports were received from any private practitioners or Missions in respect of cases of typhoid treated by them.

98. Thirty-nine of the cases were Africans and thirty-one of them were cases of typhoid, of whom eleven died. Of the remainder, six suffered from paratyphoid B and two died; there were two cases of "enteric group" disease who died.

99. Three Asiatics contracted typhoid and one died. One Asiatic suffered from paratyphoid B but recovered.

100. All the African cases were treated at Mulago hospital, at Kampala, and it is impossible to state in how many instances the disease was contracted in the town. Three of the Asiatics were treated at the Kampala Asiatic hospital and one at Mbarara.

101. The yearly incidence of typhoid in Kampala, since 1917, was thus :—

1917	0	1923	16	1929	85
1918	2	1924	6	1930	39
1919	18	1925	28	1931	66
1920	13	1926	37	1932	12
1921	6	1927	60	1933	42
1922	6	1928	56		

102. The case mortality over the last eleven years has been :—

1923	4·1	1927	21·7	1931	20·0
1924	27·3	1928	18·9	1932	18·1
1925	11·1	1929	16·4	1933	37·2
1926	17·6	1930	18·6		

103. *Tuberculosis.*—

	1929.	*1930.*	*1931.*	*1932.*	*1933.*
Cases	379	324	363	687	807
Deaths	34	44	56	66	66

104. For some years past the number of cases of tuberculosis of all varieties dealt with at Government hospitals has increased steadily. There is no reason to suppose that this state of affairs has arisen because of any epidemic or any change in the conditions of native life which might have predisposed any given race or tribe to increased liability to become infected; it must be concluded that the increase in the number of cases dealt with was because of greater improvement in diagnosis and the growing ability of the better educated dispensary orderlies to make a diagnosis of this disease and to bring such cases to the notice of the medical officer.

105. In any case, more attention has been focussed on tuberculosis and in Ankole, where it may be significant that a large proportion of the cattle of these pastoral people are heavily infected, it was found that of a small series of people tested with tuberculin about 75 per cent. gave a positive reaction; the District Medical Officer, Ankole, considers tuberculosis to be a serious disease amongst the Banyankole, progressing invariably to a fatal termination. Towards the end of the year proposals were put forward by the Veterinary Department that investigations should be undertaken jointly to determine the relationship, if any, which exists between tuberculosis in Ankole cattle and the people of the district; it was hoped to undertake the necessary work during 1934.

106. *Syphilis and Yaws.*—The combined incidence of these two diseases has varied little for some years past as is seen in the following table where the percentage is set out for the two diseases per 100 total cases treated :—

1928.	*1929.*	*1930.*	*1931.*	*1932.*	*1933.*
19·4	19·1	16·7	16·9	16·4	16·4

Although more cases of syphilis and yaws were treated in 1933 than in any previous year yet the proportions between them and all diseases were maintained as before.

	1928.	*1929.*	*1930.*	*1931.*	*1932.*	*1933.*
Syphilis	69,015	74,722	65,679	64,591	68,432	72,218
Yaws	35,126	37,378	38,066	47,598	43,773	49,546
Both diseases	104,141	112,100	104,045	112,189	112,205	121,764

107. *Gonorrhoea.*—The number of cases treated increased in 1933 to 10,702 compared with :—

1929.	*1930.*	*1931.*	*1932.*
8,609	8,619	8,931	10,591

108. *Anthrax.*—Four cases only were recorded from Government hospitals but an epidemic started during November and continued till the end of the year in the Ankole District where 62 cases occurred with nine deaths.

(*c*) Helminthic Diseases.

109. *Ancylostomiasis.*—1,021 cases with seventeen deaths were reported. There were 774 cases with seven deaths in 1932. Ancylostome infection is very widespread but as it gives rise to few definite symptoms the African rarely presents himself at hospitals solely on account of this disease.

110. *Cestoda.*—2,957 cases compared with 2,621 in 1932. The majority of cases came from :—

Mbarara, 1,070 ; Fort Portal, 484 ; Masaka, 388 ; Kampala, 292 ; Mbale, 207.

111. *Ascaris.*—1,481 cases were reported compared with 1,765 in 1932. Most cases were from the Western Province.

112. *Dracunculus.*—

1930		*1931*		*1932*		*1933*
1,482	...	1,711	...	1,478	...	1,402

The cases were distributed as follows :—

Madi, 441 ; Kitgum, 345 ; Gulu, 272 ; Arua, 115 ;

113. *Schistosomiasis.*—Eighty-one cases were recorded from Government hospitals but details were submitted in respect of a total of 155 cases which were distributed as follows :—

S. mansoni.—Entebbe, 20 ; Soroti, 30 ; Gulu, 18 ; Kitgum, 30.

Unspecified.—Butiaba, 45 ; Lira, 7 ; Others, 5.

(B) Vital Statistics.

114. The vital statistics for the Protectorate are set out in tables A, B and C. The rates are crude and are calculated from the population figures obtained in the census of 1931 which have been corrected by the addition of the births and the subtraction of the deaths occurring in the intervening years. There is no doubt that the census figures can be criticised on several points, mostly of a minor nature, but there remains the fact that the yearly rate of increase of the population since the census appears reasonable and accords well with forecasts based on the composition of the population as determined by the census ; this is in contrast to the figures for the years immediately preceding the census as the following comparative table demonstrates:—

YEARLY INCREASE OR DECREASE OF PROVINCIAL POPULATION TOTALS PER THOUSAND PEOPLE.

	1928	*1929*	*1930*	*1932*	*1933*
Buganda Province ...	+28	+34	+ 4	+ 0·4	+1·7
Eastern Province ...	+36	+47	—14	+11·5	+12
Western Province ...	— 6	+47	+54	+10·6	+1
Northern Province ...	+53	+65	+11	+15·4	+15

115. It is seen that in the pre-census years there was very little connection between the fluctuation of the estimated population from year to year ; furthermore, the totals of births and deaths which were reported varied excessively each year. The present population approximation, and the rates derived from it, may be more nearly correct since the vital statistics submitted from the various districts are now thought to have attained some degree of accuracy except in a few backward areas. The population of Karamoja has been omitted from all calculations since no statistics are rendered from that district.

116. *Birth Rate and Death Rate.*—For the whole Protectorate the birth rates were in excess of the death rates and the population increased at a rate of 10 per 1,000. All the districts showed an increased population except two, Mengo and Bunyoro.

117. In Mengo District, according to the census figures, 16·5 per cent. of the population were aliens and amongst them males exceeded the females in the proportion of nearly four to one ; it is probable, therefore, that amongst these 56,476 aliens the death rate may have exceeded the birth rate, so that, in part, some of the excess of deaths over births in Mengo could be accounted for.

118. In Bunyoro the situation was different. In the immediate pre-census years the population showed a very slight yearly increase but the census disclosed the fact that the previously submitted figures had been very incorrect. Nevertheless, using the population figures derived from the census, some 28,000 more than the pre-census figures, the birth rate for Bunyoro was found to be greater than that recorded for the last two years and was slightly in excess of the average for the last seven years ; the death rate was the lowest that has been recorded for Bunyoro during the last five years. Therefore, despite a negligible decrease of 24, the position in Bunyoro must be regarded as extremely satisfactory.

119. *Still-Birth Rate.*—It seems probable that not all the still-births which occurred can have been recorded, since otherwise there can be no explanation for a still-birth rate of 1·52 in Entebbe District and 6·44 in the adjacent district of Mubende, or 7·59 in Busoga compared with 1·18 in the adjoining district of Budama and 4·52 in Mengo. Further, the rates of 0·17 for Teso and 0·97 for Kigezi are unbelievably low.

120. *Infant Mortality Rate.*—This rate shows a substantial decrease for the Protectorate but there was a slight increase in the rates for Buganda and the Eastern Province; however, their rates for 1933 are still well below the average for recent years. Some very high rates are reported, as Chua 305·10, Gulu 238·11, Busoga 202·66, Bugishu 196·68, but these are the districts in which the birth rates are extremely high; they were respectively 46·75, 51·31, 31·66, 45·45. Conversely, infantile mortality rates approaching European standards obtained in Entebbe 87·92, Masaka 96·10, and Teso 93·77.

121. *Maternal Mortality Rate.*—As a result of a substantial rise in the figures sent in from the West Nile District, the rate for the Protectorate has risen slightly, 0·25 per 1,000 births. The reported deaths of women in child-birth must be accepted with reserve since, as a rule, it is merely the husband or a near relation who decides upon and reports the cause of death. This might explain such anomalies as a rate of 15·71 in Mengo and 6·41 in the next district, Entebbe, or 33·27 in the West Nile District with 5·71 in Gulu amongst Nilotics of a similar type and living under the same conditions.

TABLE A.—RETURN SHOWING BIRTH, DEATH, STILL BIRTH AND INFANTILE MORTALITY RATES FOR THE UGANDA PROTECTORATE FOR THE LAST SEVEN YEARS.

PROVINCE AND DISTRICT.	BIRTH RATE PER 1,000 POPULATION.							DEATH RATE PER 1,000 POPULATION.							STILL-BIRTH RATE PER 100 BIRTHS AND STILL-BIRTHS.							INFANTILE MORTALITY RATE PER 1,000 BIRTHS.							MATERNAL MORTALITY RATE PER 1,000 BIRTHS AND STILL-BIRTHS.			
	1927	1928	1929	1930	1931	1932	1933	1927	1928	1929	1930	1931	1932	1933	1927	1928	1929	1930	1931	1932	1933	1927	1928	1929	1930	1931	1932	1933	1930	1931	1932	1933
BUGANDA:—																																
Mengo	19·22	15·98	15·88	14·71	15·85	16·61	17·05	...	...	...	18·66	22·24	22·15	22·44	...	...	...	3·75	5·05	5 34	4·52	104·49	129·92	109·98	125·16	148·71	107·54	124·80	15·11	14·27	13·32	15·71
Entebbe	26·27	24·63	24·79	24·92	17·52	17·84	18·12	...	...	...	24·60	15·21	14·59	15·07	...	...	...	3·58	2·95	1·77	1·52	147·93	162·63	112·47	129·33	100·43	85·36	87·92	6·15	7·17	6·22	6·41
Masaka	25·18	23·15	25·22	26·35	27·97	25·20	29·79	...	...	...	20·68	18·44	17·42	16·64	...	...	...	2·86	3·57	5·39	3 07	127·46	146·21	109·03	106·37	97·41	89·54	96·10	9·30	7·66	5·15	6·90
Mubende	19·12	18·78	18·26	19·22	21·81	20·18	19·36	...	...	...	22·58	19·28	17·99	16·49	...	...	...	3·67	5·28	8·93	6·44	168·62	208·22	144·81	168·39	114·48	113·97	103·87	7·41	4·19	8·98	6·50
TOTAL ...	21·73	19·50	19·78	19·70	19·70	19·25	20·23	17·18	18·98	18·47	20·77	19·46	18·84	18·62	5·31	4·82	6·65	3·45	4·29	5·37	3·87	130·27	155·32	112·86	128·16	118·21	99·60	105·59	10·23	9·07	9·23	9·75
EASTERN:—																																
Busoga	39·38	35·80	35·48	37·39	31 84	31·38	31·66	20·68	20·19	18·91	26·38	23·69	22·68	20·82	4·83	5·27	4·51	4·73	6·09	7·97	7·59	276·15	288·82	292·72	267·00	234·93	206·04	202·66	13·28	13·32	13·06	13·84
Budama	21·79	20·87	25·63	37·55	34·24	33·86	36·25	...	...	...	22·75	21·39	16·95	21·39	...	...	...	1·99	1·42	1·83	1·18	448·17	421·96	373·16	264·02	211·05	145·24	123·03	12·72	10·31	11·36	10·36
Bugishu	36·09	36·86	35·12	31·64	43·31	37·82	45·45	...	...	..	21·88	23·75	20·10	24·87	...	...	...	7·37	6·46	5·76	5·32	312·52	376·65	210·05	264·59	231·84	172·86	196·68	17·37	13·94	11·82	11·26
Bugwere	22·05	20·28	22·48	26·85	26·89	29·43	31·96	...	...	...	32·59	25·63	18·82	20·34	...	...	...	4·78	6·95	5·28	5·66	309·90	305·75	364·29	196·63	181·56	134·84	142·58	20·32	16·16	11·79	11·51
Teso	17·01	15·83	19·11	21·87	23 34	23·90	21·93	...	...	...	19·15	23·73	15·53	15·51	...	...	...	0·82	0·87	0·30	0·17	119·56	138·98	121·13	85·03	88·30	87·81	93·77	15·24	13·02	12·39	10·46
TOTAL ...	26·52	25·11	26·44	30·28	31·17	30·66	32·20	...	...	...	24·26	23·62	19·27	20·22	...	...	...	4·24	4·77	4·96	4·76	285·87	308·30	264·72	223·55	198·13	158·96	163·33	15·33	13·38	12·28	11·91
WESTERN:—																																
Toro	52·25	48·77	42·92	34·35	24·26	21·12	20·92	20·75	25·06	20·30	24·26	21·70	17·30	16·00	24·42	23·32	24·03	3·58	5·71	5·58	3·81	342·21	325·02	322·26	360·76	377·57	278·54	207·66	16·58	19·25	19·08	14·58
Ankole	36·39	34·64	34·22	38·50	37·51	24·84	21·39	19·55	16·50	17·76	26·91	26·97	19·31	17·25	15·27	13·11	17·82	4·36	4·78	3·89	4·60	299·83	304·21	338·30	286·28	267·48	207·90	162·58	13·78	12·08	8·40	7·74
Kigezi	...	43·85	40·37	29·69	37·86	37·37	36·07	...	...	...	13·42	15·74	15·20	12·05	...	...	...	1·56	1·55	0·86	0·97	...	182·32	204·00	124·69	139·36	144·44	100·17	15·08	8·74	4·81	5·22
TOTAL ...	41·97	40·97	38·28	34·55	33·95	27·92	26·13	...	...	...	21·69	21·87	17·41	15·18	...	...	...	·37	3·83	2·95	2·79	318·52	271·57	290·57	256·57	243·08	194·81	143·88	14·83	12·35	9·15	8·12
NORTHERN:—																																
Lango	31·69	29·32	33·13	33·27	34·63	38·22	37·27	..	...	...	21·09	26·76	20·66	20·99	...	...	...	2·07	1·31	0·57	1·03	348·76	337·14	210·83	198·09	189·12	132·05	122·66	10·56	10·91	8·13	8·76
Bunyoro	18·25	21·63	23 77	23 26	18·03	19·17	20·38	20·03	26·98	28·76	32·56	21·59	21·33	20·59	29·68	29·53	20·44	17·63	21·13	18·98	16·01	433·14	416·53	382·36	323·51	244·17	172·08	167·46	7·81	4·97	3·33	6·87
Gulu	37·08	34·66	39·60	45·28	40·83	44·90	51·31	...	...	...	27·41	27·57	24·33	26·79	...	...	...	2·71	2·97	2·33	4·35	343·98	265·60	226·64	311·18	365·69	252·14	238·11	11·96	17·22	6·17	5·71
Chua	35·04	42 80	39·13	47·64	53·96	52·57	46·75	...	...	...	24·54	29·18	30·90	24·35	...	...	...	5·73	6·12	5·66	5·59	247·80	219·17	346·02	334·04	327·12	341·89	305·10	23·40	16·96	22·44	17·60
West Nile	44·03	35·88	28·20	28·28	27·80	28·41	25·54	...	...	...	10·79	11·61	11·42	10·00	...	...	...	4·30	3·60	3·56	2·26	184·64	106·04	104·79	229·19	234·19	259·10	243·55	40·70	47·92	23·95	35·27
TOTAL ...	34·60	32·64	32·12	33·97	32·73	34·58	33·83	...	...	...	20·49	21·37	19·32	18·49	...	...	...	4·83	5·04	4.26	4·19	283·92	241·62	220·28	259·22	258·54	223·33	206·14	20·74	22·39	13·87	15·66
UGANDA PROTECTORATE...	29·94	28·14	28·13	29·19	29·18	28·11	28·39	...	...	...	22·06	21 75	18·30	18·43	...	. .	...	4·06	4·53	4·46	4·09	259·73	254·35	232·75	223·65	209·71	173·19	160·64	15·74	14·60	11·56	11·81

TABLE B.—TABLE SHOWING INCREASE OR DECREASE OF REPORTED BIRTHS OVER REPORTED DEATHS FOR FIVE DISTRICTS FOR THE LAST 17 YEARS.

YEAR.	BUGANDA.	BUSOGA.	BUNYORO.	ANKOLE.	TORO.	TOTAL INCREMENT.
1917	— 4,385	+ 2,240	— 1,466	+ 857	+ 1,583	— 1,171
1918	— 3,873	+ 1,553	— 2,851	+ 776	+ 1,657	— 2,738
1919	— 5,709	— 3,135	— 2,061	— 1,870	— 176	— 12,951
1920	— 2,204	+ 2,025	— 1,012	+ 496	+ 907	+ 212
1921	— 711	— 1,483	— 997	+ 889	+ 1,896	— 406
1922	— 1,458	+ 2,953	— 891	+ 1,503	+ 1,872	+ 3,979
1923	— 624	+ 2,194	— 856	+ 1,611	+ 1,670	+ 3,995
1924	+ 37	+ 3,295	— 970	+ 2,329	+ 2,924	+ 7,615
1925	+ 1,059	+ 5,726	— 818	+ 3,727	+ 3,253	+ 12,947
1926	+ 1,179	+ 5,314	— 500	+ 2,891	+ 3,602	+ 12,486
1927	+ 3,475	+ 5,703	— 443	+ 4,446	+ 3,955	+ 17,136
1928	+ 1,091	+ 4,656	— 492	+ 4,848	+ 3,686	+ 13,789
1929	+ 1,357	+ 5,572	— 329	+ 4,238	+ 3,505	+ 14,343
1930	— 940	+ 3,799	— 801	+ 3,139	+ 1,571	+ 6,768
1931	+ 213	+ 3,084	— 406	+ 2,945	+ 497	+ 6,333
1932	+ 357	+ 3,322	— 246	+ 1,556	+ 743	+ 5,732
1933	+ 1,474	+ 4,184	— 24	+ 1,167	+ 962	+ 7,763

TABLE C.—VITAL STATISTICS RETURN OF THE UGANDA PROTECTORATE FOR THE YEAR 1933 (NATIVE POPULATION ONLY).

PROVINCE AND DISTRICT.	TOTALS FOR THE WHOLE YEAR.										ESTIMATED POPULATION.	RATES FOR THE YEAR.				
	Live Births.			Still Births.	Deaths.							Birth Rate per 1000 Population.	% Still Births to Births plus Still Births.	Infantile Mortality Rate per 1000 Live Births.	Maternal Mortality per 1000 Births and Still Births.	Death Rate per 1000 Population.
					Of Children under 1 year.			Of Women in Child Birth.	All Other Deaths.	Total Deaths.						
	M.	F.	Total.		M.	F.	Total.									
BUGANDA PROVINCE:—																
Mengo	3,064	2,954	6,018	285	381	370	751	99	7,069	7,919	352,916	17·05	4·52	124·80	15·71	22·44
Entebbe	1,705	1,673	3,378	52	157	140	297	22	2,491	2,810	186,391	18·12	1·52	87·92	6·41	15·07
Masaka	2,672	2,666	5,338	169	261	252	513	38	2,429	2,980	179,138	29·79	3·07	96·10	6·90	16·64
Mubende	1,593	1,430	3,023	208	175	139	314	21	2,239	2,574	156,132	19·36	6·44	103·87	6·50	16·49
TOTAL ...	9,034	8,723	17,757	714	974	901	1,875	180	14,228	16,283	874,577	20·23	3·87	105·59	9·75	18·62
EASTERN PROVINCE:—																
Busoga	6,090	6,128	12,218	1,003	1,279	1,197	2,476	183	5,375	8,034	385,900	31·66	7·59	202·66	13·84	20·82
Budama	2,672	2,864	5,536	66	363	318	681	58	2,528	3,267	152,730	36·25	1·18	123·03	10·36	21·39
Bugishu	4,312	4,098	8,410	473	858	796	1,654	100	2,848	4,602	185,057	45·45	5·32	196·68	11·26	24·87
Bugwere	2,947	2,790	5,737	344	442	376	818	70	2,763	3,651	179,485	31·96	5·66	142·58	11·51	20·34
Teso	3,112	2,903	6,015	10	292	272	564	63	3,626	4,253	274,255	21·93	0·17	93·77	10·46	15·51
*Karamoja	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTAL ...	19,133	18,783	37,916	1,896	3,234	2,959	6,193	474	17,140	23,807	1,177,427	32·20	4·76	163·33	11·91	20·22
WESTERN PROVINCE:—																
Toro	2,085	2,004	4,089	162	460	389	849	62	2,216	3,127	195,419	20·92	3·81	207·66	14·58	16·00
Ankole	3,069	2,965	6,034	291	537	444	981	49	3,837	4,867	282,077	21·39	4·60	162·58	7·74	17·25
Kigezi	4,362	4,183	8,545	84	420	436	856	45	1,954	2,855	236,896	36·07	0·97	100·17	5·22	12·05
TOTAL ...	9,516	9,152	18,668	537	1,417	1,269	2,686	156	8,007	10,849	714,392	26·13	2·79	143·88	8·12	15·18
NORTHERN PROVINCE:—																
Lango	4,331	4,025	8,356	87	510	515	1,025	74	3,607	4,706	224,150	37·27	1·03	122·66	8·76	20·99
Bunyoro	1,200	1,123	2,323	443	210	179	389	19	1,939	2,347	113,950	20·38	16·01	167·46	6·87	20·59
Gulu	2,684	2,502	5,186	236	632	603	1,235	31	1,441	2,707	101,060	51·31	4·35	238·11	5·71	26·79
Chua	1,997	1,864	3,861	229	611	567	1,178	72	761	2,011	82,574	46·75	5·59	305·10	17·60	24·35
West Nile	3,312	3,085	6,397	148	803	755	1,558	231	716	2,505	250,427	25·54	2·26	243·55	35·27	10·00
TOTAL ...	13,524	12,599	26,133	1,143	2,766	2,619	5,385	427	8,464	14,276	772,161	33·83	4·19	206·14	15·66	18·49
UGANDA PROTECTORATE ...	51,207	49,257	100,464	4,290	8,391	7,748	16,139	1,237	47,839	65,215	*3,538,557	28·39	4·09	160·64	11·81	18·43

* The Population of Karamoja (65,758) has been excluded from the total population and from all calculations of rates because no vital statistics are submitted from that district.

EUROPEAN OFFICIALS.

122. The officials included in Table D below are those officials whose names appear in the Protectorate Staff List only, with the exception of railway drivers and firemen. Wives and families are not included nor are officials of the Kenya and Uganda Railways and Harbours whose names do not appear in the staff list; the reason for the latter omission is that these officials, often engine drivers and guards, are not stationed in Uganda, and enter and leave the Protectorate continually in the course of their duties. In their case it would not be possible to give either the total or the average number resident.

Table D.

123. Table showing the sick, invaliding and death rates of European officials during the last three years:—

	1931	*1932*	*1933*
Total number of officials resident	607	542	508
Average number resident	501	442	397
Total number on sick list	1,075	751	819
Total number of days on sick list	3,053	2,536	2,177
Average daily number on sick list	8·35	6·94	5·96
Percentage of sick to average number resident	1·66	1·57	1·50
Average number of days on sick list, each patient	2·84	3·37	2·65
Average sick time, each resident	6·09	5·74	5·48
Total number invalided	6	5	1
Percentage of invaliding to total residents	0·98	0·92	0·19
Total deaths	2	1	Nil
Percentage of deaths to total residents	0·33	0·18	—
Percentage of deaths to average number resident	0·40	0·22	—
Number of cases of sickness contracted away from station		No record.	
Number granted local sick leave	31	23	23
Average number of days sick leave for each patient granted local sick leave	16·35	14·73	16·95

124. The most common diseases were:—

Malaria	244	Influenza	17
Diseases of the Respiratory System	28	Tonsillitis	24
Diseases of the Digestive System	23	Local Injuries	64

125. *Medical Boards* were held to enquire into the health of seven European officials during the year and the following recommendations were made:—

(*a*)	To be invalided out of the service:—	
	Phthisis	1
(*b*)	To proceed on home leave for treatment	4
	Pharyngitis	1
	Amœbic Hepatitis	1
	Auricular Fibrillation	1
	Extrinsic carcinoma of larynx	1
(*c*)	To proceed on home leave:—	
	Blackwater Fever	1

One officer of the King's African Rifles was examined by a Medical Board to determine whether he was fit for posting to any Eastern African station. He was passed as fit for posting only to a healthy station.

126. *Deaths.*—Nil.

EUROPEAN NON-OFFICIALS.

127. The number of European non-officials who attended Government hospitals during the year was 1,611 as compared with 1,896 during the previous year.

128. *Deaths.*—Seven deaths were reported compared with twelve in 1932. The causes of death were:—

Plague	2	Erysipelas	1
Eclampsia	1	Blackwater Fever	1
Heart Failure	1	Peritonitis	1

129. *Principal causes of sickness.*—

Malaria	353	Influenza	26
Injuries	109	Diseases of the Respiratory System	46
Tonsillitis	29	Diseases of the Digestive System	33

Table E.

130. Table showing the sick, invaliding and death rates of Asiatic officials during the last three years:—

	1931	*1932*	*1933*
Total number of officials resident	384	352	346
Average number resident	332	293	286
Total number on sick list	871	1,184	1,202
Total number of days on sick list	2,551	3,197	2,385
Average daily number on sick list	6·98	8·75	6·53
Percentage of sick to average number resident ...	2·10	2·98	2·28
Average number of days on sick list for each patient	2·92	2·70	1·98
Average sick time each resident	7·68	10·91	8·33
Total number invalided	6	4	6
Percentage of invalidings to total residents ...	1·56	1·13	1·73
Total deaths	7	2	1
Percentage of deaths to total residents	1·82	0·56	0·28
Percentage of deaths to average number resident ...	2·10	0·68	0·35
Number of cases of sickness contracted away from stations		No record.	
Number granted local sick leave	10	11	7
Average number of days on sick leave for each patient granted sick leave	18	14·90	15

131. The most common diseases were:—

Malaria	413	Diseases of the Skin	39
Diseases of the Respiratory System ...	193	Rheumatism and Myalgia	35
Influenza	53	Local Injuries	71
Diseases of the Digestive System ...	43		

132. *Medical Boards* were held on eight Asiatic officials with the following results:—

To be invalided out of the service:—

Fatty infiltration of heart	1
* Neurasthenia	2
* Mental delusion and confusion	1
† Hyperpiesia with arterio sclerosis	1
Age and debility	1

*Two of these officials were invalided out of the service on the recommendations of Medical Boards held in Bombay.

†Died on arrival in Bombay.

To proceed on leave and continue treatment, and to be passed as fit before return:—

Diabetes	1

Condition found to have no deleterious effect on service in the Protectorate:—

Hypermetropia—left eye	1

133. *Deaths.*—One hyperpiesia with arterio sclerosis.

ASIATIC NON-OFFICIALS.

134. 6,197 Asiatic non-officials attended Government hospitals for treatment during 1933 as compared with 6,208 during the previous year.

135. 113 deaths amongst Asiatic non-officials were notified—the chief causes of death were:—

Blackwater Fever	29	Malaria	10
Pneumonia	16	Plague	7
Heart Failure	14		

136. *Principal causes of sickness.*—

Malaria	2,068	Rheumatism and Myalgia	80
Influenza	150	Diseases of the eye	121
Injuries	155	Diseases of the Respiratory System	572
Ulcers, abcesses, and diseases of the skin	218	Diseases of the Digestive System ...	223

Section III.

HYGIENE AND SANITATION.

A. GENERAL REVIEW OF WORK DONE AND PROGRESS MADE.

(I) Preventive Measures.

(a) Mosquito and Insect-Borne Diseases.

137. *Malaria.*—The Entomological Section of the Agricultural Department undertook mosquito surveys at Bukalasa Experimental Station and at the Luzira Central Prison. Re-surveys of Kampala and Jinja were undertaken and work at Kabale was continued during most of the year. The detailed reports on these surveys are printed in Appendix I. Further afforestation of swampy areas was undertaken by the Forest Department, in connection with anti-malarial works at Eastern Province Government stations; the total cost of these works was £1,540. An expenditure of £1,136 on anti-malarial measures other than afforestation was incurred during the year. The reclamation of the swamps comprising the Jinja lake front was continued and half-a-mile of embankment was completed with the concomitant removal of sudd. The Entomologist's comment on these measures was that "no mosquitoes were to be found breeding in the areas where permanent anti-malarial measures had been applied."

138. *Trypanosomiasis.*—Clearings were maintained by the Provincial Administration at all scheduled landings, river crossings and watering places in sleeping sickness areas throughout the Protectorate. All of these clearings and the people using them were inspected by medical officers as often as circumstances permitted. The policy was adopted more generally of following up all cases of trypanosomiasis and endeavouring to ascertain exactly where the infection could have been acquired. This necessitated domiciliary visits and frequently these led to the discovery of comparatively large numbers of new cases in the early stages of the disease. The increased number of cases reported from the Aringa District of the West Nile Area indicated the utility of this routine. Attention was directed to rendering patients non-infective by immediate treatment with Bayer 205 and it is possible that, combined with the systematic tracing up of the circumstances and home conditions of all cases and the maintenance of adequate clearings, this method of prophylaxis is of real value.

139. In certain areas, debushing schemes were put forward and in some instances carried out. The most ambitious recommendation, the debushing of long stretches of the banks of the River Ora in the West Nile, was discovered to be unnecessary after investigation by the Entomologist. As far as possible, the Entomologist carried out investigations to ascertain the distribution of *G. palpalis* and made recommendations for the control of the fly in connection with each outbreak of trypanosomiasis during the year.

140. Special circumstances in connection with three of the sleeping sickness areas call for separate comment.

141. *A. Gulu Sleeping Sickness Area.*—As projected in last year's report, it was found possible to extend the re-settlement of certain areas in the district; there was no increase in the number of cases of trypanosomiasis as a result of these measures. Two new gland examination posts were opened during the year at Palabek and at the Abbia Ferry; both were used as treatment centres.

142. *B. Lake Edward—George Sleeping Sickness Area.*—A medical officer was posted for special duty to this area for three months in the earlier part of the year. His investigations and examination of the portion of the population he managed to induce to attend resulted in the discovery of a large number of new cases. It was recommended that certain clearings should be made and that closer administrative supervision should be exercised. These clearings were ultimately made but at the end of 1933 it was again reported by the District Medical Officer that the posting of an administrative officer for duty in these sleeping sickness areas would be of assistance in controlling the movements of the people. Cases continued to be reported up to the close of the year and, despite the fact that many of them were undoubtedly infected in the adjacent epidemic areas of the Congo, it is certain that trypanosomiasis has gained a footing in the Busongora area and is unlikely to be eradicated in the immediate future. The apathy of the local population in this district renders it extremely difficult to induce people to present themselves for examination. At the end of the year the position was not acute, but it is to be remembered that given favourable conditions this epidemic could very easily become extremely dangerous despite the sparseness of *G. palpalis* in the infected part of Busongora; in any case, trypanosomiasis is now endemic in the area.

143. *C. Victoria Nyanza—Nile Sleeping Sickness Area.*—Early in the year it was found possible by the Government of Tanganyika Territory and the Uganda Protectorate to formulate and enforce the following control measures designed to prevent the ingress into Uganda of Tanganyika natives infected with *T. rhodesiense*:—

(*a*) Tanganyika Territory was declared an infected area under the Uganda Infectious Diseases Ordinance and the passage into Uganda was prohibited of all persons except Europeans and Asiatics, with their servants, and Africans whose sanitary guarantees were acceptable.

(*b*) The Tanganyika Government undertook to issue passes to natives for entrance into Uganda only to those who were not inhabitants of a sleeping sickness area or any area likely to become infected or who did not have to pass through any such area on their way to Uganda. No passes were to be issued to inhabitants of certain specified areas except in cases where such natives had been under medical observation in a fly-free area for a period of not less than two months and who did not have to pass through a fly area to reach Uganda.

(*c*) The Tanganyika Government agreed to undertake investigations into sleeping sickness conditions in certain areas which, if infected, could constitute a real danger to Uganda.

(*d*) The Tanganyika Government agreed to close all ferries on the inter-territorial boundary except those mutually agreed upon and passage was to be refused to any native prohibited from entering Uganda under the terms of the above proposals.

(*e*) Objections would not be maintained by the Uganda Government to the issue of temporary passes by the Native Authorities of Tanganyika Territory for natives to cross that part of the Kagera River lying entirely in Tanganyika Territory, provided that such passes should not be valid for travelling in Uganda and that the Uganda Government should be responsible for the control of the whole of the boundary in respect of natives crossing this boundary for the purpose of paying visits and in respect of natives who entered or attempted to enter Uganda from Tanganyika without authority.

(*f*) The Uganda Government withdrew its opposition to the re-establishment of the fishing industry in the Kagera River.

144. An entomological survey was carried out on the lower reaches of the Kagera and it was discovered that *G. palpalis* was entirely absent.

145. Despite the introduction of the above measures, one case of *T. rhodesiense* infection was found at Masaka after control measures had been in force for some months. A second case, who died, from Tanganyika Territory was seen earlier in the year at Masaka. It is obvious, therefore, that infected Tanganyika natives can still enter Uganda without much difficulty and it remains to be seen if the present administrative propaganda, directed towards the encouragement of the production of sick immigrants at hospitals and dispensaries will have any further results. The situation at the end of the year, therefore, was not such as to justify an undue degree of optimism regarding future developments, but pending the completion of the above-mentioned investigations by the Tanganyika Government, it is not possible to formulate any new lines of defence.

146. *Typhus Fever.*—Fewer cases were reported during the year from the immediate vicinity of Kabale, which was the epidemic area during 1932, but the total number of cases treated rose slightly as a result of the admission to hospital of typhus cases from more remote areas. The inhabitants of the area are extremely primitive and being poor their dress is composed of skins which afford ideal harbourage to the lice which are universal. The eradication of typhus must depend, therefore, on the raising of the economic level of these people and their gradual education towards less insanitary habits.

(*b*) Epidemic Diseases.

147. *Plague.*—Under the conditions which prevail in Uganda it has become increasingly obvious that the most hopeful method of dealing with endemic plague and the frequent epidemics which arise is to concentrate more attention on the hygiene of rural areas. During 1933 this was done and efforts were made by medical officers to stimulate interest in improved housing throughout Uganda. Where possible, addresses were given by administrative and medical officers at native gatherings, at schools and at hospitals; the importance was stressed of good housing with clean environs and suitable conservancy arrangements. It has been noticed that, as economic circumstances permit, the average native tries to improve his dwelling place and in Buganda Province this is particularly the case, and it is rare now to see any of the older type of round insanitary grass huts. Often the newer type of square hut is little better than the older variety but some desire for improvement is evident even if inspired only by vanity.

148. The methods employed in past years for combating outbreaks of plague were continued and extended during the year and an increased amount of routine work was delegated to trained African staff with good results.

149. Native Governments continued to endeavour to enforce certain regulations of an elementary nature which were directed towards the keeping clean of huts and their surroundings. But their efforts and those of medical officers were largely stultified by the apathetic and transient interest displayed towards the whole question of plague by those most concerned. Indeed, this apathetic attitude was commented on by the officers employed on anti-plague measures. It can only be hoped that continuous propaganda and the gradual spread of education may lead, in time, to an appreciation of the reasons for and the benefits to be obtained from the observance of anti-plague measures.

150. Some observations on rodents and their ectoparasites were submitted from Buganda and the Eastern Province. In Buganda, *R. rattus* appeared to be the chief domestic species and in Busoga and Budama no others were found in huts or houses, apart from the occasional finding of an obviously casual visitor such as *Graphiurus murinus* or *A. abyssinicus*. In Buganda it was found that *X. brasiliensis* was most common on specimens of *R. rattus* caught in rural areas and *X. cheopis* predominated on those trapped in the town. In the Eastern Province, only urban catches were considered and both *X. cheopis* and *X. brasiliensis* were seen, the latter in slightly larger numbers. The average number of fleas caught per rat was four. Occasionally, *Dinopsyllus lypusus* and *Ctenocephalides felis strongylus* were seen but they were extremely rare. In Buganda the common field rodents, *R. coucha* and *A. abyssinicus*, were found to harbour *X. cheopis* and *X. brasiliensis* in numbers comparable to *R. rattus*, but in Busoga it was extremely rare to find any fleas on either of these species. It was noticed in the Eastern Province that, of the female *R. rattus* killed during the whole year, about 25 per cent. were pregnant; the number of fœti varied from one to seven, with an average of four.

151. *Smallpox.*—No cases of smallpox occurred during the year. The following table gives the number of vaccinations performed during 1933:—

Province and District.	Total.	Successful.	Modified.	Failed.	Unknown.
BUGANDA PROVINCE.—					
Entebbe District	5,568	784	531	190	4,063
Mengo „	11,011	5,860	3,456	1,676	19
Mubende „	4,321	830	409	1,901	1,181
Masaka „	3,482	1,329	1,111	—	1,042
TOTAL ...	24,382	8,803	5,507	3,767	6,305
EASTERN PROVINCE.—					
Busoga District	13,569	2,873	1,132	2,699	6,865
Bugwere and Bugishu Districts ...	6,863	2,746	1,978	2,139	—
Budama District	6,630	2,451	2,427	1,389	363
Teso District	6,330	1,529	2,333	1,591	877
TOTAL ...	33,392	9,599	7,870	7,818	8,105
WESTERN PROVINCE.—					
Ankole District	3,806	57	38	16	3,695
Toro „	9,870	7,637	—	1,345	888
Kigezi „	209	79	10	45	75
TOTAL ...	13,885	7,773	48	1,406	4,658
NORTHERN PROVINCE.—					
Bunyoro District	9,590	4,715	1,826	1,521	1,528
Chua „	4,494	1,888	1,006	1,163	437
Gulu „	5,759	1,344	856	858	2,701
Lango „	4,588	1,793	875	783	1,137
TOTAL ...	24,431	9,740	4,563	4,325	5,803
GRAND TOTAL ...	96,090	35,915	17,988	17,316	24,871

(*c*) HELMINTHIC DISEASES.

152. The observations made in recent years were borne out during 1933 by the investigations of medical officers working in different parts of Uganda, who confirmed the fact that helminthic disease was widespread, particularly ancylostomiasis. In certain districts, notably Busoga, it is thought that the incidence must approximate to 100 per cent. Medical officers expressed the opinion that although it did not often appear in the medical returns ancylostomiasis was probably the most important factor contributing to the general debility which is common in Uganda.

153. Other helminths met with, though not so commonly as ancylostomes were *T. solium*, *T. saginata*, *A. lumbricoides*, *Dracunculus medinensis* and *S. haematobium* and *S. mansoni*. The latter appeared to have a limited distribution, and it was found that in Busoga, on the shores of Lake Victoria, no schistosome infection could be demonstrated amongst lake-shore dwellers or lake-shore reclamation workers, yet cases were reported amongst dwellers on the lake-shore near Entebbe. An investigation undertaken by the District Medical Officer, Entebbe, failed to demonstrate that either *Planorbis boissyi* or *Bullinus contortus*, which are common in Lake Victoria, harboured *cercariae* on the Entebbe lake-shore. It is probable, therefore, that those persons who suffered from schistosomiasis may have contracted the disease from some infected swamp or water-hole in their vicinity and not directly from Lake Victoria. This is borne out by the fact that sporadic cases of schistosomiasis are not uncommon throughout the whole of Uganda and this indicates infection by localised water supplies rather than infection conveyed by the water of the larger lakes and rivers.

154. *Dracunculus Medinensis* was confined almost entirely to the more arid northerly portion of Uganda where the usual washing and drinking place is a shallow well or stagnant rain-water pool.

155. During the year, in some districts, attempts were made by propaganda, chiefly by the issue of vernacular pamphlets and by lectures at native gatherings and schools, to impress on the population the best methods of avoiding infection with the common helminths. In some areas, the provision of adequate pit latrines at each hut was made compulsory under Native Law and in others attention was paid to water supplies.

(II) General Measures of Sanitation.

156. Little advance was made in any large township regarding the disposal of sewage, drainage, scavenging and refuse. The latter two services were only rarely efficient and adequate drains and sewers do not exist. What could be done was done with the limited funds provided but until money becomes available to finance efficient water-borne sewerage systems and storm-water drains little progress can ever be reported.

157. In the rural areas more attention was paid to rural hygiene, particularly housing and the disposal of refuse and excreta.

(III) School Hygiene.

158. Except in a few districts all that could be done was the periodical inspection of district schools by District Medical Officers. In a few instances, periodical clinics for school-children were held at schools and hospitals.

159. At Jinja and Mbale, detailed examinations at several schools were carried out. At Mbale, 250 children were seen and 44 per cent. of them were found to be suffering from some disability, chiefly malaria and skin affections. The schools inspected were situated in a particularly healthy locality and, furthermore, no serological examination of the blood or microscopic examination of the stools or blood was attempted and therefore the estimation given of the existing morbidity must be very much lower than actually exists.

160. From Jinja, detailed reports were submitted in regard to 260 school-children and at the end of the year the Senior Health Officer reported that he considered 100 per cent. of the children seen were diseased in some way. They suffered chiefly from ancylostomiasis, syphilis, trachoma, malaria, skin diseases, and general malnutrition. The Kahn test was carried out in 105 instances and a specimen of blood and fæces was examined from each child. The following is a summary of the diseases affecting the 157 children of one school which was of the nature of a secondary boarding school into which entrance would be denied to the obviously diseased:—

	Per cent.		*Per cent.*
Syphilis	47	Skin diseases	8
Ancylostomiasis	59	Eye diseases	7·5
Trachoma	34	Dull and backward	6
Malaria	68	Other helminth infections	5
Anæmia	38	Caries teeth	3
Sore throats, enlarged tonsils, etc.	11	Various other disabilities	3

The Senior Health Officer concluded his report by stating "it seems amazing to me that these children, each of whom harbours a veritable museum of assorted parasites, should be able to carry on with their work."

161. In order to encourage the attendance of children at school clinics it was decided not to insist on any payment for treatment with the various arsenicals. The amounts to be issued free were left to the discretion of the medical officer who was concerned only with the cure of the patient before him.

162. The value of school inspectional work was appreciated and numerous requests were received from various Native Authorities and Educational Institutions to extend the scope of the work; during 1934 it will be extended.

163. School medical work is a branch of preventive medicine which can be developed rapidly in a native territory such as Uganda; its effects are obvious and gratifyingly rapid so that even the most unsophisticated of African parents are able to appreciate the appearance of their children before and after the receipt of treatment for any of the common debilitating diseases. Allied to infant and child welfare work, school medicine forms the most important part of the responsibilities of a Government medical service and is the branch most prolific in direct results.

164. In connection with school hygiene, the following notes on the examination of the teeth of some African children by Mr. George W. B. Bateman, L.D.S., R.C.S. (*Eng.*), are of interest :—

The examination on which these notes are based was undertaken at Jinja. The children were Basoga but some Nilotic Police children were seen. There was little real evidence from which definite conclusions could be drawn, for the following reasons :—

(*a*) Only 95 children were seen.

(*b*) In many cases there was doubt as to the correctness of the ages of the children seen.

(*c*) Disparity in the advancement of growth in the dentition of those of apparently similar age.

(*d*) The signs of congenital syphilis in a large number of the children, this disease tending to disarrange the normal course of eruption.

It was evident, however, that the eruption of teeth tended to be earlier in these African children than in European children of the same age. For example, in almost all cases the permanent upper central incisors had begun to erupt at five years of age, and the eight incisors were in place by seven years. In many cases, again, all the permanent teeth, except the third molars, were in place by the age of ten or eleven years. But this difference tends to be masked by the irregularity of eruption ; one case in particular was noted: this child of ten had the second permanent molars with all but one premolar unerupted, thus:

7 6 e d — 2 1	1 2 c 3 d e 6 7
7 6 e d 3 2 1	1 2 3 — 4 e 6 7

Note also the retained upper left temporary canine !

The eruption of the wisdom teeth appears to occur at a very much earlier age than with Europeans. Most of the adolescents of 15 and 16 years, and all at 17, had complete dentitions.

Two cases of rudimentary "peg" type upper lateral incisors were noted, and several cases of superior protrusion, but generally crowding of the teeth was a rare condition. Retention of temporary teeth beyond normal age was not infrequent ; indeed, in one case a premolar was erupting through the shell of its predecessor.

Among the banana-eaters gingivitis was common, and in two cases great masses of tartar, moulded by the cusps opposing, were noted. The calculus lay one side only and, when questioned, the children admitted to masticating with the clean side.

Among the grain-eaters at the Police School, mouths were cleaner, but in those cases in which tribal custom demanded the removal of the lower incisors gingivitis was noted round the upper incisors. Caries appeared to be rare amongst all the children examined—only one or two teeth in a few individuals.

It may be stated that :

(*a*) These children's teeth tend to erupt earlier than with European children.

(*b*) Caries is rare.

(*c*) Gingivitis is common amongst banana-eating people.

(*d*) Irregularities in time or order of eruption are not infrequent.

(*e*) Irregularities in position seem to be confined to superior protrusion.

(*f*) The condition of the teeth examined was superior to that of the average European child, but the state of the gums was inferior.

(IV) Labour Conditions.

165. Government-controlled camps were inspected regularly and the health conditions and general sanitation of the camps was good. So far, there is little available in the way of permanent quarters at any Government station. The smaller stations do not yet require such accommodation but it is probable that in the near future this question will require a solution.

166. Most medical officers again commented on the poor housing conditions prevailing at most ginneries in Uganda. There are no legal measures which can be applied at the moment to force ginners to provide minimum standards of housing and feeding but it is hoped to obtain such powers in the future; meanwhile, a certain amount was done by persuasion to improve conditions.

(V) Housing and Town Planning.

167. In all Government stations the housing for European and Asiatic employees is reasonably good. Apart from some township camps for Government labourers, there was no attempt to house African Government employees apart from those employed in institutions.

168. Housing conditions in almost every Asiatic bazaar in Uganda were poor. It was evident that in the past not even the minimum requirements of the Township Building Rules had been enforced in many instances. It was hoped in the future to enforce these regulations and to endeavour to abolish gradually those buildings which contravene the elementary laws of hygiene. Overcrowding was common in many places and difficult to deal with.

169. African housing remains unsatisfactory and only years of practical example and precept, together with improved economic conditions, can be expected to effect any improvement.

(VI) Food in Relation to Health and Disease.

170. The chief relation food appeared to bear to disease in Uganda was that the lack of suitable food was undoubtedly a contributory factor in the under-nourishment, debility and anæmia so often seen. The diet of the natives of Uganda consists mainly of carbohydrates and is deficient in fats and protein since few of them get meat and fewer still drink milk.

171. Few deficiency diseases were diagnosed in 1933, presumably on account of the good harvest of 1932, and in general the incidence of disease attributable directly to food was small.

172. Milk production methods, apart from one or two European dairies, was unsatisfactory and efforts were made to improve the conditions under which milk was retailed and under which cows were milked.

173. Water-borne diseases were infrequently met with although water supplies for Europeans and Asiatics were very exiguous except at Jinja and Kampala where a piped water supply is available. Native water supplies everywhere were of a poor type except where lakes or larger rivers were available. There can be little doubt that a large proportion of the ill-defined intestinal disturbances encountered could be attributed to polluted water supplies.

B. MEASURES TAKEN TO SPREAD THE KNOWLEDGE OF HYGIENE AND SANITATION.

174. Little extension of past activities took place during 1933, but in several districts pamphlets on health subjects were issued to Native Authorities, schools and other centres of native activity. On a number of occasions, medical officers were invited to address Lukikos and there is no doubt that these lectures were a very valuable means of spreading a knowledge of the principles of public health. In co-operation with the Native Administration, it is hoped in future to make addresses of this nature a regular feature of all large native gatherings held in each district. As a means of extending a knowledge of hygiene and health matters, it is proposed to hold an Infant Welfare and Public Health Exhibition in Kampala during 1934.

C. TRAINING OF SANITARY PERSONNEL.

175. No systematic training of African Sanitary personnel was undertaken. It is hoped that in the near future training can be organised; a scheme is in course of preparation for the development of an efficient African Sanitary Inspector service.

Section IV

176. **PORT HEALTH WORK AND ADMINISTRATION.**

Not applicable.

Section V.

MATERNITY AND CHILD WELFARE.

177. *Maternity and Child Welfare.*—The principle was laid down during 1933 that considerably more prominence should be given to maternity and child welfare work than in past years and that, taken with school medical work, it should be developed as one of the most important duties of the department. This decision was arrived at for several reasons, the chief of which were :—

(i) The fact that investigations into the health of the children of school age revealed that a really healthy child who had no disease of any sort, was of very infrequent occurrence. Furthermore, the greater portion of the disability from which school-children suffered was of a type which could have been prevented or alleviated if they had received medical attention at an earlier period in their lives. The diseases referred to were chiefly hereditary syphilis, blindness and other complications of parental gonorrhœa, and general disability arising from malnutrition extending over years. No less important, on account of their wide distribution, and equally preventable were such diseases as trachoma, chronic infestation with helminths, chronic skin diseases and disability due to old-standing ulcers which had been due to syphilis or to neglected injuries.

(ii) That it seemed an inversion of the order of events to endeavour to instil into school-children the rules of personal hygiene and elementary sanitation when neglect to apply those rules had already allowed them to become diseased and in many instances their physique permanently impaired. The mind of the African child is largely influenced by environment; consequently, it is essential that his earliest impressions should be of surroundings consonant with the laws of health.

(iii) That the application of child welfare methods to even a small proportion of the community must exercise an influence over a very wide circle because, whilst the child is under supervision, the mother, and often also the friends who accompany her, receives the benefit of practical advice as to what can be done to prevent children from contracting some of the common diseases and as to the manner in which children should be reared.

178. Special child welfare clinics were therefore started at several stations and were generally combined with centres where ante-natal treatment and advice were made available. Dr. Langton, the Senior Medical Officer, Northern Province, has for the past two or three years been conducting clinics of this type at certain sub-dispensaries in the Masindi District. Observations made by him on the development of the African child have been incorporated in a paper which should appear shortly in the *East African Medical Journal.* At Mulago hospital, a group of voluntary lay workers assisted Dr. H. M. Twining, the wife of a Government officer, to conduct a maternity and child welfare clinic for Africans during the last five months of the year; by the end of the year 195 children had been seen. Plans were being formulated at the end of the year for an extension of this successful clinic to Kampala town, where it was proposed to hold it in one of the old Civil Hospital buildings. The possibility of opening a similar clinic for Asiatics was also under consideration as several of the Asiatic private practitioners in Kampala had urged that this should be done and had undertaken to assist.

179. At Entebbe, an extremely successful clinic was opened by Mrs. Lutze-Wallace in October and by the end of the year 830 women had attended for ante-natal treatment and 229 children had been brought for advice. It was soon found necessary to provide beds at this clinic for African maternity cases as so many of the women attending for ante-natal treatment were desirous of having their babies in hospital. Of the beds in the centre, an average of eight per diem have been filled.

180. On a less ambitious scale, a child welfare clinic was opened in Jinja township and at the end of the year thirty new cases were appearing at each session. It is hoped that this number will increase when the Sister from the Native Hospital is able to attend regularly. A maternity home built of temporary materials was also opened at Bugembe, about six miles from Jinja, at the request of the Busoga Native Administration. It is supervised by the District Medical Officer.

181. At Fort Portal child welfare clinics have been established though the absence of an European Sister here is a grave drawback, while in all Government hospitals it has long been the policy to encourage the attendance of women for ante-natal consultations and treatment.

182. Special forms for recording data in connection with maternity and child welfare work have been devised and issued to all districts. However, it was not possible at the end of 1933 to tabulate the results since not all of the forms could be completed. Still, the table set out under para. 34 is sufficient to show that a very real advance had been made in this branch of work and the fact that the number of women who attended for ante-natal supervision rose from 3,700 in 1931 to 12,110 in 1933 is extremely significant.

183. Of all institutions doing maternity work, the Government Native Hospital at Masaka had the most cases; 1,344 women attended for ante-natal treatment and 430 confinements took place in the hospital, which resulted in the birth of 390 living children. In this series; amongst 391 cases who had been under ante-natal supervision there were no maternal deaths and only two children died; of 45 women admitted for confinement and who had had no ante-natal supervision there were seven maternal deaths and five children died. The success of this maternity ward is largely attributable to the popularity of the midwife, and of the medical officers and nursing sisters who have supervised it.

184. Excerpts from the reports of Sir Albert Cook on the Lady Coryndon Maternity Training School and its dependent centres appear below, together with a note on the results of the general nurses' training given at Ndeje and Mengo hospitals. This is followed by excerpts from the Annual Report of the Reverend Mother Kevin, M.B.E., on the work of the Nsambya Maternity Training School and of the maternity centres attached to that school. The full reports of Sir Albert Cook and Mother Kevin appear as Appendices II and III.

185. *Excerpts from Sir Albert Cook's Report on the Lady Coryndon Training School:—*

"Thirty students have been in residence during the year, of whom nine passed the Government Qualifying Examination and three failed (one of these twice). With some brilliant exceptions, the rank and file have not done so well during the last three years but the five qualified nurses from Ndeje Training College who are now completing their year's training in the school are, as indeed was expected, head and shoulders above the rest."

The six tables following are from Sir Albert Cook's report.

TABLE I. OUT-PATIENTS, CENTRAL INSTITUTION, NAMIREMBE.

	1931.	*1932.*	*1933.*
Total out-patient attendances	5,609 ...	5,083 ...	4,844
New patients	1,595 ...	1,475 ...	1,440
Syphilitic patients (latent and active)	917 ...	867 ...	783
Babies	925 ...	726 ...	744
Syphilitic percentage of total cases	57% ...	59% ...	51%

TABLE II. IN-PATIENTS IN THE CLINICAL WARDS ATTACHED TO THE TRAINING SCHOOL.

	1931.	*1932.*	*1933.*
Admissions during the year	739 ...	656 ...	688
B.B.A. cases admitted	42 ...	31 ...	29
Miscarriages	18 ...	10 ...	24
Babies deaths	37 ...	25 ...	25
Still births	54 ...	33 ...	49
Maternal deaths	22 ...	12 ...	14
Total confinements—including B.B.As. ...	317 ...	292 ...	310
Living babies discharged	253 ...	252 ...	260

TABLE III. OPERATIONS DURING 1933 IN THE CENTRAL INSTITUTION.

Cæsarean Section	5	Forceps Delivery	35
Perforation and Cranioclasm ...	6	Removal of Placenta	6
Decapitation	1	Miscellaneous	4

Of the five Cæsarean Sections, all the mothers were discharged well and four of the babies. The fifth baby was syphilitic and died in six weeks. One (miscellaneous) operation was a laparotomy by Dr. Margaret Cook in a case of ruptured uterus. The rupture had occurred some time previously, and the child was extracted from among the bowels. The mother made a good recovery.

TABLE IV. CAUSES OF MATERNAL DEATHS IN 1933.

Ruptured uterus	3	All these had had much native medicine.
Obstructed labour	4	All admitted *in extremis* after native medicine. Two had marked pelvic contraction.
Puerperal sepsis	5	Four admitted after long labour at home (3—5 days), one admitted in a septic condition with an adherent placenta. Friends had tried to remove it at home.
Eclampsia	1	
Hæmatemesis	1	Much native medicine at home. Retained placenta after miscarriage.

TABLE V. CAUSES OF INFANT DEATHS IN THE CENTRAL INSTITUTION, 1933.

Imperforate anus and absence of 3rd part of rectum	3	All B.B.A.
Prematurity	14	(one of two lbs. weight lived for two months).
Septic Cord	3	All B.B.A.
Congenital syphilis	3	
Bronchitis	1	Died on admission.
Pressure during labour	1	
	25	

TABLE VI. COUNTRY CENTRES.

Centre.	Conf. and B.B.A.	Living Children.	Still Births.	Miscellaneous.	Thr. Misc.	Maternal deaths.	Total O.P.	Total C.W.	Total V.D.
1. Bushenyi	23 ... 1	21	3	—	—	—	508	131	99
2. Ibanda	37 .. 16	52	4	—	—	1	1,876	535	254
3. Iganga	73 ... —	69	4	—	—	—	1,606	865	170
4. Jungo	67 ... 2	67	3	4	—	—	1,836	195	234
5. Kabasanda ...	27 ... 5	33	—	5	2	—	2,003	234	234
6. Kabuwoko ...	94 ... 52	144	5	—	1	—	2,666	544	316
AUGUST—DECEMBER.—									
7. Kabwoko	14 ... —	13	2	—	—	—	341	93	159
8. Kako	82 ... 13	90	5	1	—	—	2,044	384	401
9. Kapeka	32 ... 4	36	1	1	2	—	1,898	409	307
10. Kasaka	66 ... 5	70	2	—	—	—	2,102	497	311
DECEMBER.—									
11. Kiboga	49 ... 2	51	—	—	—	—	1,509	204	143
12. Kikoma	51 ... 11	60	2	—	—	—	2,565	293	113
13. Kira	51 ... 2	49	4	2	—	—	1,544	203	136
AUGUST —DECEMBER.—									
14. Hoima	35 ... —	30	5	1	—	—	274	105	43
JANUARY.—OCTOBER.—									
15. Intete (Plague) ...	26 ... —	24	2	—	2	—	2,489	438	440
16. Luwero	29 ... —	25	4	—	—	—	1,427	189	316
17. Mbarara	65 ... 13	73	5	1	—	1	2,451	447	191
18. Mityana	38 ... —	37	1	4	—	—	2,321	225	184
19. Nakifuma	109 ... —	92	17	—	—	—	3,781	712	645
20. Namulonge ...	53 ... 8	56	6	7	—	—	2,488	412	245
21. Ngogwe	52 ... 7	53	6	8	1	1	2,662	334	291
	1,073 ... 141 ... 1,214	1,145	81	34	8	3	40,391	7,449	5,232
22. Ndeje Hospital ...	112	95	18	8	3	7	7,334	901	670
23. Lady Stanley, Mukono	163	153	10	—	—	—	6,587	926	900

24-27. Toro hospital, Gahini hospital, Mengo hospital, Ngora hospital.—Statistics appear under the hospitals concerned.

28-32. Rubona. Kahangi, Kumi, Nabumali.—No reports yet received. Kumi centre temporarily closed.

186. *Excerpt from Reverend Mother Kevin's Report on Nsambya Maternity Training School:—*

"Number of students in training during the year 25
Number who passed the Government Examination 11

Number of patients in the Clinical Wards attached to the Junior and Senior Schools:—

Confinements	192
Still-born	11
Miscarriages	9
Maternal deaths	3
Living children discharged	172
Cæsarian Sections	2
Forceps	10
Total out-patients Ante-natal	465
Child Welfare	112

COUNTY CENTRES.

Centre.	*Confinements.*	*Ante-natal Clinic.*	*Child Welfare Clinic.*
Kisubi	65 ...	238 ...	55
Katende	74 ...	204 ...	30
Bikira	170 ...	345 ...	51
Mitala Maria	152 ...	344 ...	156
Nkokonjeru	89 ...	367 ...	114
Budaka	30 ...	439 ...	20
Nagongera	16 ...	33 ...	10
Nyondo	12 ...	54 ...	12
Kamuli	80 ...	132 ...	84
Nagalama	50 ...	640 ...	20
Lwala	46 ...	430 ...	10
Namilyango	— ...	187 ...	12
Gayaza	63 ...	164 ...	22
Rubaga	40 ...	90 ...	22
Ngora	10 ...	350 ...	250
Villa Maria	197 ...	371 ...	347
Koki	16 ...	4 ...	Nil
Nyenga	89 ...	413 ...	53
Budini	5 ...	15 ...	5
Butiti	12 ...	32 ...	9

Section VI.

Hospitals and Dispensaries.

187. The Public Works Department expended the following sums on medical buildings during the year:—

	£
Miscellaneous minor works	898
Temporary medical buildings	515
Maintenance of and improvements to buildings	779
	£2,192

188. Table F shows medical units, beds, attendances, etc., for the Protectorate by districts, and a list of sub-dispensaries appears on page 44.

189. Table G sets out details of the activities of the Pharmaceutical Section of the Medical Store for the last seven years.

Table F on pages 42 and 43.

Table G.

In the following table is set out the amounts of some preparations manufactured, wholly or partly, in the Pharmaceutical Section of the Medical Store during the past seven years.

		1927	*1928*	*1929*	*1930*	*1931*	*1932*	*1933*
Tincture	*pts.*	2,768	2,533	4,420	5,236	4,954	4,323	3,137
Liniments	,,	2,387	2,455	3,879	3,843	3,873	3,202	2,273
Ointments	*lbs.*	7,183	6,604	10,389	12,313	11,024	14,061	11,376
Dusting powder	,,	810	303	602	700	800	813	320
Infusions, conc.	*pts.*	704	752	1,236	1,256	1,064	864	464
Hard soap	*lbs.*	10,130	10,910	14,370	6,250	—	9,156	—
Soft soap	,,	5,960	5,426	6,096	8,838	9,280	—	9,855
Sundries	,,	2,113	3,933	5,108	5,187	3,905	1,773	3,071
Bismuth sod. pot. tart ...	,,	20	40	24	5	17½	45	33½
Cataplasma Kaolin ...	,,	—	—	—	—	—	—	640
Sterilized solns. for injection	*cc.*	—	—	—	—	—	—	5,300
Insecticide	*pts.*	—	—	—	—	—	—	296
Oxymels and syrups ...	*lbs.*	—	—	—	—	—	—	1,323

Table F.—MEDICAL UNITS, BEDS

	BUGANDA PROVINCE.					WESTERN PROVINCE.			
	Entebbe District.	Mengo District.	Masaka District.	Mubende District.	Province.	Toro District.	Ankole District.	Kigezi District.	Province.
Medical Units.									
European Hospitals	1	1	...	...	2	...	...	...	...
Asiatic Hospitals	1	1	1	...	3	...	..	...	...
African Hospitals	1	2	1	1	5	1	1	1	3
Sub-Dispensaries	1	8	6	6	21	9	4	4	17
*Other Units	4	6	23	8	41	8	4	10	22
In-Patients.									
Beds Available:									
European	7	18	...	...	25	...	...	...	...
Asiatic	4	30	3	...	37	...	...	...	...
African in Hospitals	51	301	80	...	432	40	36	82	158
African in Sub-dispensaries ...	...	...	...	27	27	...	...	...	...
Total ..	62	349	83	27	521	40	36	82	158
Cases Admitted:									
European	47	281	...	...	328	...	...	...	...
Asiatic	47	515	9	...	571	...	...	...	...
African	881	6,888	2,368	495	10,632	1,819	1,598	1,162	4,579
Total ...	975	7,684	2,377	495	11,531	1,819	1,598	1,162	4,579
Total Number of In-Patient Days ...	13,947	105,871	33,819	7,987	161,624	34,641	15,168	21,697	71,506
Average Daily Number in Wards ...	38·2	290·0	92·6	21·8	442·8	94·9	41·5	59·4	195·9
Out-Patients.									
Attendances	50,330	358,430	161,869	146,344	716,973	137,667	311,104	160,119	608,890
Total New Cases.									
European	425	930	27	8	1,390	62	57	2	121
Asiatic	761	2,354	264	44	3,423	86	82	9	177
African	11,488	85,765	34,040	26,026	157,319	45,130	58,640	16,766	120,536
Total ...	12,674	89,049	34,331	26,078	162,132	45,278	58,779	16,777	120,834
Medical Examinations	2,100	5,335	4,126	412	11,973	2,231	4,315	338	6,884
GRAND TOTAL ...	14.774	94,384	38,457	26,490	174,105	47,509	63,094	17,115	127.718
Surgical Operations.									
General Anæsthesia	23	1 270	155	29	1.477	48	26	75	149
Spinal Anæsthesia	...	25	30	...	55	5	30	...	35
Other Anæsthesia	39	503	150	6	698	87	105	176	368
Total ...	62	1,798	335	35	2,230	140	161	251	552

* "Other Units" represents Prisons, Missions, Labour Camps, Examination Posts, Schools, etc.

AND PATIENTS BY DISTRICTS.

EASTERN PROVINCE.							NORTHERN PROVINCE.							Uganda Protectorate.
Busoga District.	Budama District.	Bugishu District.	Bugwere District.	Teso District.	Karamoja District.	Province.	Lango District.	Bunyoro District.	Gulu District.	Chua District.	Madi Sub-District.	West Nile District.	Province.	
1	...	...	1	...	...	2	...	...	...	...	...	...	...	4
1	..	...	1	1	...	3	1	2	...	...	...	...	3	9
2	1	...	1	1	1	6	1	3	1	1	1	1	8	22
5	3	4	3	4	...	19	3	8	3	1	5	8	28	85
14	7	28	22	20	2	93	15	12	3	2	3	17	52	208
4	...	...	5	...	...	9	...	...	...	...	...	...	...	34
6	...	...	2	4	...	12	4	5	...	...	...	...	9	58
116	40	..	80	52	9	297	54	82	32	33	38	40	279	1,166
86	10	20	22	34	...	172	40	...	...	...	...	23	63	262
212	50	20	109	90	9	490	98	87	32	33	38	63	351	1,520
31	...	...	47	...	...	78	...	...	...	...	...	...	...	406
50	...	...	16	9	...	75	4	11	...	...	...	...	15	661
3,704	937	410	1,303	1,084	233	7,671	1,588	1,215	786	710	338	1,599	6,236	29,118
3,785	937	410	1,366	1,093	233	7,824	1,592	1,226	786	710	338	1,599	6,251	30,185
67,413	21,721	2,997	27,467	17,734	3,263	140,595	28,260	22,226	11,019	18,253	9,986	30,012	119,756	493,481
184·6	59·5	8·2	75·2	48·5	8·9	385·1	77·4	60·8	30·1	50·0	27·3	82·2	328·0	1,352·0
165,353	97,163	90,606	119,138	239,810	5,755	717,825	184,652	343,681	107,701	69,660	59,394	236,298	1,001,386	3,045,074
310	101	...	151	73	11	646	58	111	31	9	...	50	259	2,416
1,257	401	...	419	387	6	2,470	552	580	96	47	7	27	1,309	7,379
78,254	27,919	47,773	39,952	67,941	1,854	263,693	42,574	38,620	31,938	13,909	17,915	47,420	192,376	733,924
79,821	28,421	47,773	40,522	68,401	1,871	266,809	43,184	39,311	32,065	13,965	17,922	47,497	193,944	743,719
1.943	965	2,222	2,372	2,412	313	10,227	2,348	8,330	6,224	858	21,786	73,007	112,553	141,637
81,764	29,386	49,995	42,894	70,813	2,184	277,036	45,532	47,641	38,289	14,823	39,708	120,504	306,497	885,356
147	109	...	174	93	...	523	344	216	28	24	18	22	652	2,801
...	...	...	...	...	...	...	...	22	15	7	...	...	44	134
159	4	...	4	91	13	271	382	75	82	16	11	70	636	1,973
306	113	...	178	184	13	794	726	313	125	47	29	92	1,332	4,908

A List of Sub-Dispensaries Open or Under Construction in 1933.

Name.	District.	New Cases 1933.	Attendances 1933.	Year opened.	Remarks.
Mukono ...	Mengo ...	3,087	29,296	1923	Permanent buildings. Ward not in use.
Kasangati ...	,, ...	3,691	12,233	1923	,, ,, ,, ,,
Bowa ...	,, ...	7,081	24,451	1923	Permanent buildings. No ward.
Kalagala ...	,, ...	5,855	17,356	1930	,, ,, ,,
Kome ...	,, ...	535	3,010	1923	Island dispensary. Temporary buildings.
Buvuma ...	,, ...	645	5,608	1923	,, ,, ,, ,,
Nakasongola ...	,, ...	3,363	13,914	1931	Temporary buildings.
Wakiso ...	,, ...	4,487	12,901	1923	Permanent buildings. No ward.
Mpigi ...	Entebbe ...	1,146	4,976	1923	Permanent buildings.
Kasenyi ...	Mubende ...	5,223	23,706	1926	,, ,,
Mityana ...	,, ...	6,413	17,527	1923	,, ,,
Kibale ...	,, ...	3,465	25,980	1926	Temporary buildings.
Kakumiro ...	,, ...	3,292	13,080	1928	,, ,,
Madudu ...	,, ...	1,897	9,756	1928	,, ,,
Kyanasoke ...	,, ...	2,655	20,092	1931	,, ,,
Kalungu ...	Masaka ...	6,532	26,970	1927	,, ,,
Kalisizo ...	,, ...	3,340	17,688	1923	,, ,,
Katera ...	,, ...	1,447	8,274	1926	Permanent buildings.
Kalangala ...	,, ...	2,035	6,021	1923	Temporary buildings. Island sub-dispensary.
Rakai ...	,, ...	4,284	13,925	1927	Temporary buildings.
Lyantonde ...	,, ...	3,432	15,979	1927	,, ,,
Kaliro ...	Busoga ...	7,928	9,531	1927	Permanent buildings. Ward for 30 beds.
Namwendwa ...	,, ...	18,363	12,739	1925	Permanent unit built 1932. Ward for 38 beds.
Bugiri ...	,, ...	7,523	5,693	1925	Temporary buildings.
Namungalwe ...	,, ...	9,407	5,198	1925	,, ,,
Nsinze ...	,, ...	11,636	6,618	1927	,, ,,
Nagongera ...	Budama ...	5,696	22,412	1927	,, ,,
Butaleja ...	,, ...	5,939	14,431	1927	,, ,,
Masafu ...	,, ...	9,593	16,465	1926	Permanent buildings. Ward for 10 beds.
Bubulu ...	Bugishu ...	11,384	10,019	1922	District headquarters. Permanent dispensary and temporary wards for 20 beds.
Budadiri ...	,, ...	14,441	19,626	1922	Temporary buildings.
Butiru ...	,, ...	11,077	10,316	1931	,, ,,
Bulecheke ...	,, ...	10,671	13,803	1931	,, ,,
Budaka ...	Bugwere ...	9,760	8,695	1930	,, ,,
Kamuge ...	,, ...	9,652	14,069	1922	Permanent buildings. Ward for 21 beds.
Bukedia ...	,, ...	12,132	26,178	1926	Permanent buildings.
Katakwe ...	Teso ...	9,381	22,460	1926	Temporary buildings.
Serere ...	,, ...	14,700	29,148	1924	Permanent buildings.
Amuria ...	,, ...	8,755	23,204	1924	,, ,,
Kamod ...	,, ...	7,302	24,952	1931	Temporary buildings.
Kakabara ...	Toro ...	3,408	5,045	1922	Semi-permanent buildings.
Kasule ...	,, ...	4,752	12,082	1930	Temporary buildings.
Butiti ...	,, ...	7,123	5,782	1925	,, ,,
Bundibugyo ...	,, ...	3,094	11,932	1926	,, ,,
Kisomoro ...	,, ...	6,888	12,709	1926	,, ,,
Bugoye ...	,, ...	1,115	5,757	1932	,, ,,
Mpondwe ...	,, ...	3,053	7,024	1932	,, ,,
Kanyampara ...	,, ...	1,142	4,823	1933	,, ,,
Rwaitengya ...	,, ...	4,576	7,396	1932	,, ,,
Bushenyi ...	Ankole ...	11,060	21,483	1922	Permanent buildings.
Lwasamaire ..	,, ...	7,590	27,730	1922	,, ,,
Ruhoko ...	,, ...	11,477	79,355	1922	Temporary buildings.
Kinoni ...	,, ...	9,407	21,485	1931	Permanent buildings.
Mpalo ...	Kigezi ...	2,336	30,172	1922	Temporary buildings.
Rukingiri ...	,, ...	1,948	26,706	1922	Semi-permanent buildings.
Kinkizi ...	,, ...	2,391	27,617	1922	Temporary buildings.
Gisolo ...	,, ..	1,565	20,491	1922	,, ,,
Aduku ...	Lango ...	6,303	17,004	1922	Permanent buildings. Ward for 20 beds.
Kaberamaido ...	,, ...	15,203	39,617	1931	,, ,, ,, ,,
Aboki ...	,, ...	9,174	31,473	1931	Temporary buildings.
Dwoli ...	Bunyoro ...	2,254	13,689	1925	Semi-permanent buildings.
Kiziranfumbi ...	,, ...	3,136	11,201	1925	,, ,, ,,
Kisaru ...	,, ...	1,695	16,114	1931	,, ,, ,,
Masindi Port ...	,, ...	1,841	16,342	1925	Permanent buildings.
Kiriandongo ...	,, ...	2,377	23,119	1926	,, ,,
Kinyala ...	,, ...	1,404	14,253	1925	Permanent building of private estate.
Busingiro ...	,, ...	1,722	10,240	1925	Temporary buildings. Closed 11-10-33.
Bujenge ...	,, ...	2,438	25,476	1932	Temporary buildings.
Kejonjubwa ...	,, ...	662	2,394	1933	,, ,,
Pader ...	Chua ...	6,009	18,612	1932	Semi-permanent buildings.
Minakulu ...	Gulu ...	6,443	16,793	1930	Permanent buildings.
Attiak ...	,, ...	6,798	15,283	1931	,, ,,
Awach ...	,, ...	6,396	16,384	1932	,, ,,
Ajumani ...	Madi ...	4,955	11,408	1927	Semi-permanent buildings.
Zaipi ...	,, ...	1,464	2,476	1931	Temporary buildings.
Ubongi ...	,, ...	2,017	1,169	1933	,, ,,
Laropi ...	,, ...	2,580	3,120	1931	,, ,,
Palarinya ...	,, ...	974	3,906	1932	Temporary buildings. Closed 1-7-33.
Terego ...	West Nile...	5,334	60,781	1925	Permanent buildings.
Pakwach ...	,, ...	5,549	17,222	1930	Temporary buildings.
Pai-Ida ...	,, ...	5,103	22,465	1930	,, ,,
Nebbi ...	,, ...	3,977	13,196	1931	,, ,,
Aringa ...	,, ...	3,390	17,762	1928	,, ,,
Udupe ...	,, ...	1,673	6,173	1932	,, ,,
Landonga ...	,, ...	2,515	6,984	1932	,, ,,
Rumogi ...	,, ...	2,329	3,650	1932	,, ,,

Report on the Uganda Medical School, Mulago, for the Year 1933.

190. The education of an African Medical Assistant on the same lines as a doctor, as compared with the training of a medical attendant as a nurse, began in 1923. The Medical School was built in 1928 and the Medical Students' Hostel in 1929. Both the school and hostel are situated at Mulago Hospital (286 beds) where ample material and accommodation for teaching are provided. The school consists of a laboratory (pathology and physiology), a dissecting room, a museum and a lecture room. The hostel provides sleeping and dining accommodation for twenty students and a study with access to the hospital library is set apart for the students.

191. The course of training extends over five years; the first two are devoted to the preliminary sciences which are taught at Makerere College where the students reside. During the third year, residence at Makerere continues but the teaching of Anatomy, Physiology and Pharmacy takes place at the Medical School. At the beginning of the fourth year, students transfer to the hostel and continue to reside there until the course is completed. Pathology, Bacteriology and Parasitology, Pharmacy and Therapeutics are studied in the fourth year for the Final Examination, Part I. At the same time, Systematic Medicine and Surgery are taught in preparation for clinical teaching in these subjects which with Midwifery and Gynæcology occupy the fifth and final year. A short course in Medical Jurisprudence and instruction in the special clinics completes their studies prior to taking the Final Examinaton, Part II.

192. At the end of 1932 fifteen had qualified. Ten were admitted to and confirmed in their appointments in the Civil Service, five are still on probation.

193. Seven students completed the study of the preliminary sciences at Makerere College and enter their third year in 1934.

194. Seven candidates in their third year were presented for examination in Anatomy and Physiology. Six satisfied the examiners, one failed to do so for the second time and has discontinued the course.

195. Seven candidates in their fourth year were presented for examination in Pathology and Therapeutics. All passed in Therapeutics, four failed in Pathology and will be re-examined in June, 1934.

196. Four candidates in the final year were presented. One passed in all subjects; one passed in all subjects but failed in the oral examination in Surgery and will be re-examined in March, 1934; two passed in Midwifery and failed in Medicine and Surgery, one will be re-examined in June, 1934, the other will not be presented again.

197. I am indebted to Dr. R. Yelverton Stones, M.C., M.D. (Lond.), M.R.C.P. (Lond.), F.R.C.S.E., of the Church Missionary Society's Hospital, Mengo, for examining the fifth-year students, and to Dr. H. D. Tonking, M.R.C.S., L.R.C.P., Assistant Bacteriologist, Kenya, for examining the fourth-year students in Pathology and Allied Subjects.

198. Extracts from the examiners' reports follow:—

(i) *Dr. Stones reports—*

"In the *Tropical Diseases Bulletin* of October, 1933, page 665, Dr. H. B. Owen, D.S.O., O.B.E., states that 'so far as examinations can be accepted as a test, these remarks (that is, remarks taken from my reports on the examinations held in 1928, 1931 and 1932) show that the standard of knowledge is reasonably high but convey no information of practical ability.'

It was, therefore, my endeavour in this examination just held to concentrate more on the practical and *vivâ voce* examination than in previous years. This was done by making the possible marks the same for the practical examination as for the written.

The standard of the written work was again uniformly good, the practical and *vivâ voce* was not so efficient. Inability to apply knowledge and to correlate physical signs with underlying pathological conditions at the bedside of the patient was found. Again, there was shown a lack of knowledge of the use of apparatus such as instruments and splints.

In the midwifery and gynæcological examination on the other hand the practical and *vivâ voce* examination was found to be better than the written work."

(ii) *Dr. H. D. Tonking reports—*

"The spelling, syntax and composition of the answers was decidedly weak, but the knowledge displayed, considering the extremely wide range of the subject matter, was fairly good. The easier questions, such as the life history of the hookworm and the asexual cycle of *P. falciparum* were on the whole well answered, but the question on acute osteo-myelitis was very badly done, consisting mostly in the enumeration of all the organisms which could affect bone in any way, and a marked failure in most cases to grasp the entire pathological picture.

Some of the papers showed a marked inclination to quote blocks of subject matter, often irrelevant, rather than to pick out the essentials required by the question.

In the oral examination, the recognition of pathological specimens in jars (brought from Nairobi and never previously seen by the students) was extremely good; not one candidate failed to recognise a specimen of a small intussusception which would have been a difficult test for the average European student."

Section VII.

REPORT ON PRISONS AND ASYLUMS FOR 1933.

199. *Health.*—The morbidity rate for all prisons was 46 and the details for each prison are shown in the following table:—

	Daily Average in Prison.	Daily Average on sick list.	Deaths.	Morbidity rate.	Death rate.
Central Prison	910	25	22	27	24
Entebbe	85	2	...	...	...
Masaka	22	5	...	...	...
Mubende	23	2	...	...	...
Jinja	87	4	...	...	...
Mbale	106	1	3	9	28
Tororo	11	1	...	...	...
Soroti	106	6	1	54	9
Moroto	24	1	...	...	...
Masindi	33	5	1	...	...
Lira	45	5	...	...	...
Arua	62	7	2	...	...
Gulu	117	3	1	25	9
Kitgum	84	6	1	...	...
Fort Portal	28	3	1	...	...
Mbarara	44	4	2	...	...
Kabale	41	5	...	...	...
Total ...	1,828	...	34	...	...

200. Only the rates for the larger prisons are shown because those calculated from the figures supplied by the smaller gaols give an erroneous impression of the health conditions obtaining in them on account of the apparently high rates due to the small numbers dealt with.

201. Minor diseases and local injuries, as usual, accounted for the greater part of the total sickness, but malaria, influenza and bronchitis were common. Seventy-two cases of xerophthalmia were seen at Luzira Prison but they responded at once to the administration of cod liver oil and spinach.

202. *Deaths.*—The death rate for all prisons was 18·6. The rates for the last six years were:—

1927	...	50·6	1929	...	40·9	1931	...	17·7
1928	...	70·5	1930	...	26·5	1932	...	15·75

Of the 22 deaths which occurred amongst the inmates of the Central Prison, four were mental cases who were housed in the prison awaiting despatch to the mental hospital. Four more were persons detained in the prison on remand and who were ill when admitted and were taken to hospital, where they died. The causes of these eight deaths were dementia (3), lobar pneumonia (3), meningitis (1) and trypanosomiasis (1). If these mental cases and sick remand prisoners were to be excluded, the death rate amongst the actual convicts in the Central Prison would have been 15·95, which would compare favourably with the rates for past years.

The causes of death were:—

Pneumonia lobar	8	Peritonitis	1
Tuberculosis pulmonary	4	Meningitis pneumococcal ...	1
Dementia	4	Meningitis syphilitic	1
Broncho pneumonia	3	Malaria	1
Trypanosomiasis	2	Ascites	1
Tuberculosis miliary	1	Bronchitis	1
Cerebral Hæmorrhage	1	Ancylostomiasis	1
Dysentery bacillary	1	Epilepsy	1
Dysentery unclassified	1	Duodenal ulcer	1

203. *Diet.*—The authorised ration scale remained unaltered at the Central Prison and it consisted of:—

	Ounces per diem.		*Ounces per diem.*
Maize	20	Fresh vegetables	6
Beans	5	*or* Sweet Potatoes	10
Groundnuts	3	Meat	4
Salt	½	(if dry)	2

204. At the Entebbe Prison from 1st January, 1933, to 30th November, 1933, the approved diet scale was given with the addition of seven ounces meat daily until November. After that, it was arranged that all long-term prisoners should be transferred to the Central Prison and the meat ration was then stopped. At all the other prisons, the prescribed diet was adhered to except where substitutes were approved for issue in those prisons situated in areas where the staple diet differed very greatly from the prison diet scale.

205. The daily average population of the seventeen Protectorate prisons was 1,828 and this included, at various times, one European and fifty-seven Asiatics. They were distributed as follows:—

	Accommodation available.	*Average Daily Number in Prison.*
Central Prison	955	910
Entebbe	143	85
Masaka	65	22
Mubende	26	23
Jinja	83	87
Mbale	100	106
Tororo	16	11
Soroti	160	106
Moroto	41	24
Masindi	34	33
Lira	120	45
Arua	63	62
Gulu	80	117
Kitgum	100	84
Fort Portal	30	28
Mbarara	30	44
Kabale	55	41

206. In addition, a few prisoners were confined in the Native Government Prison at Moyo.

207. The general sanitary condition of district gaols is set out below.

When less than 28 square feet of floor space was available for each prisoner, it was considered that overcrowding took place. Four prisons were overcrowded on this basis, *viz.*, Jinja, Mbale, Gulu and Mbarara.

Buganda Province.

208. *Luzira Central Prison.*—The available accommodation during 1933 was stated to be sufficient for 955 prisoners, instead of 1,247; this was due to calculating the floor space required for each prisoner at 40 square feet instead of at 28 square feet as in the past. Ventilation was improved in certain of the cells and, if the new system proves satisfactory, it will be extended. A semi-permanent kitchen was in use pending the provision of a new permanent kitchen with steam cooking to be built on the lines suggested by Dr. J. P. Mitchell, O.B.E. An attempt was made to provide soak pits for the disposal of urine but the rocky nature of the ground prevented this being done and the bucket system of conservancy continued in use.

209. *Entebbe, Masaka, Mubende.*—Apart from mosquito-proofing the accommodation wards at Entebbe, there was no change in the accommodation. There was no overcrowding during the year. New kitchens are required at Mubende and Entebbe and bucket latrines at the Entebbe warders' lines.

Eastern Province.

210. *Jinja.*—This prison building is old and is not satisfactory. During the year a new cement trough for washing plates and cups was erected. There are no adequate bathing or washing facilities and the prison was overcrowded during the year.

211. *Mbale, Soroti, Moroto.*—There has been no change in the accommodation provided. The Mbale prison was overcrowded.

212. *Tororo.*—Only remand cases and those having sentences up to 28 days are accommodated in this prison, which was newly gazetted in 1933.

Northern Province.

213. *Masindi.*—No alteration has taken place, since it is intended to transfer the prisoners to Hoima when the present Mental Hospital is vacated and brought into use as a prison.

214. *Kitgum, Lira, Arua.*—The temporary buildings were in use and there was no alteration in the accommodation.

215. *Gulu.*—This temporary building was overcrowded, as 117 prisoners were housed in accommodation sufficient for 80.

Western Province.

216. *Mbarara.*—As in past years, this prison was infested with *O. moubata* which was only checked, temporarily, by the application of tar to the walls. As usual, the building was overcrowded.

217. *Kabale and Fort Portal.*—No change took place in the accommodation available.

Native Administration Prisons.

218. Some of the temporary Native Administration prisons were replaced by permanent buildings. This was the case particularly in Masaka and Teso but improvements were seen in some areas, notably Bunyoro. As a rule no standard ration scales have been laid down or adhered to. Conditions cannot be considered to be satisfactory and it is only the facts that work carried out by these prisoners is very light, that they are able to supplement their diet from private sources, and that the terms of imprisonment are of short duration only which prevents serious outbreaks of disease amongst them.

219. So far as could be ascertained, the health of the Native Administration prisoners was fairly good and facilities for medical treatment and inspection were provided for each prison as far as possible.

Mental Hospital, Hoima.

220. Apart from minor improvements, no change took place in the accommodation available at the Hoima Mental Hospital. It is hoped, during 1934, to build a complete new mental hospital at Kampala, near Mulago, and to transfer all the mental patients to it.

Table I. Admissions, Deaths, etc., during the Year.

	Male.	*Female.*	*Total.*
Inmates remaining 31st December, 1932	46 ...	18 ...	64
Number admitted during the year	14 ...	2 ...	16
Number released	5 ...	— ...	5
Number escaped	— ...	— ...	—
Number transferred	— ...	— ...	—
Number who died	10 ...	3 ...	13
Number remaining 31st December, 1933	45 ...	17 ...	62
Causes of Death.			
Asthenia	9 ...	2 ...	11
Broncho Pneumonia	1 ...	— ...	1
Dysentery	— ...	1 ...	1

Table II.—MENTAL HOSPITAL.

Table Showing the Movements of the Mental Hospital Population for each Year for the Years 1922—1933 together with Recovery and Death Rates.

Year.	First Admissions.			Re-Admissions.			Total Admissions.			Total Number under Treatment.			Number Discharged.			Number Died.			Number Remaining at end of Year.			Average Daily number on Register.			Percentage of Discharges on Total Admissions.			Percentage of Deaths on Average Daily Number on Register.		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
1921 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24	3	27	...	...	...	...	...	...	...	...	...
1922 ...	11	3	14	1	...	1	12	3	15	36	6	42	7	1	8	9	...	9	20	5	25	20	3	23	58·3	33·3	53·3	45·0	...	21·4
1923 ...	31	6	37	...	...	...	31	6	37	51	11	62	12	3	15	10	2	12	29	6	35	26	6	32	38·7	50·0	40·5	38·4	33·3	37·5
1924 ...	20	8	28	...	...	...	20	8	28	49	14	63	8	...	8	12	3	15	29	11	40	29	9	38	40·0	...	28·5	41·3	33·3	39·4
1925 ...	26	4	30	...	...	...	26	4	30	55	15	70	3	...	3	9	3	12	43	12	55	32	11	43	11·5	...	10·0	28·1	27·2	27·9
1926 ...	29	13	42	1	...	1	30	13	43	73	25	98	5	1	6	16	4	20	52	20	72	48	16	64	16·6	7·6	13·9	33·3	25·0	31·2
1927 ...	15	5	20	2	...	2	17	5	22	69	25	94	15	7	22	17	4	21	37	14	51	38	18	56	88·2	140·0	100·0	44·7	22·2	37·5
1928 ...	21	5	26	3	1	4	24	6	30	61	20	81	2	...	2	18	1	19	41	19	60	37	16	53	8·3	...	6·6	48·6	6·2	35·8
1929 ...	22	7	29	1	...	1	23	7	30	64	26	90	10	4	14	14	1	15	40	21	61	37	20	57	43·4	57·1	46·6	37·8	5·0	26·3
1930 ...	14	3	17	1	...	1	15	3	18	55	24	79	6	4	10	9	2	11	40	18	58	37	19	56	40·0	133·3	55·5	24·3	10·5	19·6
1931 ...	16	6	22	1	1	2	17	7	24	57	25	82	5	3	8	6	4	10	46	18	64	42	17	59	29·3	42·8	33·3	14·3	23·5	16·9
1932 ...	18	2	20	1	...	1	19	2	21	65	20	85	5	...	5	14	2	16	46	18	64	47	18	65	26·3	...	22·9	29·8	11·1	25·0
1933 ...	14	2	16	...	...	...	14	2	16	63	19	82	5	...	5	10	3	13	45	17	62	45	17	62	35·7	...	31·2	27·4	17·6	20·9
Totals ...	237	64	301	11	2	13	248	66	314	367	104	471	83	23	106	144	29	173	...	...	...	...	...	...	...	...	...	...	...	...

Section VIII.

221. *Meteorology.*—All available information is printed in the Blue Book.

Section IX.

SCIENTIFIC.

222. Scientific papers published during the year 1933 by members of the Medical Staff:—

Dr. R. E. Barrett.—

"Epidemiological Observations on Plague in the Lango District of Uganda."—*East African Medical Journal*, January, 1933, Vol. X, No. 6.

Mr. E. J. Gibbins.—

"Eggs of Some Ethiopian Anopheles Mosquitoes."—*Bulletin of Entomological Research*, 1933, July, Vol. 24, Pt. 2).

"The Domestic Anopheles Mosquitoes of Uganda."—*Annals of Tropical Medicine and Parasitology*, 1933, April 10th, Vol. 27, No. 1.

"Studies on Ethiopian Simulidæ."—*Transactions of Royal Society, London*, 1933, June 20th, Vol 81, Pt. I.

Mr. E. G. Gibbins and Dr. L. J. A. Loewenthal.—

"Cutaneous Onchocerciasis in a *Simulium damnosum* infested region of Uganda."—*Annals of Tropical Medicine and Parasitology*, 1933, Pt. 4, Vol. 27.

Dr. M. Holliday.—

"A Case of Toxic Albuminuria of Pregnancy in a Muganda."

Dr. L. J. A. Loewenthal.—

"On the Probable Inclusion of Several Diseases in the title 'Mossy' Foot."
"The Significance of Colour Changes in the African Skin."

Observations on Health in Relation to Diet in H.M. Uganda Central Prison.

(*a*) Diet and Morbidity, by J. P. Mitchell.
(*b*) The Ocular Manifestations of Vitamin A Deficiency, by H. B. Owen.
(*c*) A New Cutaneous Manifestation in the Syndrome of Vitamin A Deficiency, by L. J. A. Loewenthal.

ANNUAL REPORT OF THE LABORATORY SECTION FOR THE YEAR 1933.

PART I.

223. *Staff.*—The staff consists of :—.

Europeans.		*Africans.*	
Senior Bacteriologist	1	Laboratory Attendants	4
Assistant Bacteriologists	2	Laboratory Learners	14
Analytical Chemist	1	Clerical Staff	2
Laboratory Assistants	2	Subordinate Staff	4

The Senior Bacteriologist went on leave on 28th May, 1933, and was away till the end of the year.

Mr. J. Stewart, Laboratory Assistant, went on leave on 13th April, 1933, and returned on 26th November.

Mr. E. G. Gibbins, Laboratory Assistant, went on leave on 11th December, 1933.

224. *General Review of 1933.*—During the year the work has been carried out on the same lines as last year, the only change being that the laboratory staff has undertaken all post-mortem examinations in and about Kampala. This includes all medico-legal post-mortems and post-mortem demonstrations to the medical students as well as any post-mortems specially asked for in cases where expert knowledge is desired by the medical officer in charge. Since 3rd April, when this change took place, 164 post-mortems have been done.

PART II.

225. The number of examinations carried out in all sections is practically the same as last year.

226. *A. Blood Examinations.*—

	Europeans.	*Asiatics.*	*Africans.*	*Total.*
For parasites	539	639	11,111	12,289
Differential leucocyte counts	92	66	258	416
Total blood counts, *i.e.*, W.B.C., R.B.C., C.I. and Hb per cent.	5	7	157	169
White cell counts	6	3	2	11
Red cell counts	—	—	—	—
Blood cultures	4	6	4	14
Blood grouping	—	4	6	10

227. Of the malarial infections diagnosed, there is a larger proportion than usual of "unidentified" cases. This is due to the fact that with the number of slides dealt with it is impracticable to examine thin smears of all cases or to supervise every slide. In many cases, the diagnosis has to be left to the senior learners as the Laboratory Assistant in charge of this section has only one qualified Laboratory Attendant to help him. Another point of note is the small number of benign tertian infections diagnosed. It is doubtful if this diminution is actual in view of the previous year's findings.

228. From blood cultures *B. typhosus* was isolated twice.

229. A good deal of time is taken up by blood counts which in many cases appear to be of little practical value, though no doubt the ideal is to have every case thoroughly investigated.

230. The blood-grouping tests were all carried out for actual cases of transfusion and cross-agglutination was done in each case.

231. *B. Faeces Examinations.*—

	Europeans.	*Asiatics.*	*Africans.*	*Total.*
Microscopical for ova	214	47	4,267	4,528
Microscopical for protozoa	225	43	283	551
Microscopical for T. B.	1	—	1	2
For occult blood	41	2	84	127
Cultures	8	4	41	53

232. Of the African stools examined, the percentage of helminth infections appears to be lower. This may be due partly to the increasing number of Africans wearing shoes and partly to the fact that the staff has not the time to carry out prolonged search in each case. Out of 4,267 African stools examined for ova, those of *Ancylostoma* were found in 1,923, of *Trichuris* in 307, of *Ascaris* in 80, of *Taenia* in 78, of *S. mansoni* in one, and of *Strongyloides* in one. Of the 214 European stools, two contained ova of *Ancylostoma*, one those of *Trichuris* and one those of *Taenia*. Of the 43 Asiatics, four contained ova of *Ancylostoma*, four those of *Trichuris* and one those of *Taenia*. *B. dysenteriae* (Flexner) was isolated once and *B. typhosus* twice from African stools. *E. histolytica* was found in thirteen out of 283 African stools, in one out of 225 European and in one out of 43 Asiatic.

233. *C. Examinations of Urine.*—

	Europeans.	*Asiatics.*	*Africans.*	*Total.*
Routine examinations	336	110	3,835	4,281
Albumin—quantitative	6	—	5	11
Sugar—quantitative	—	24	—	24
Acetone	1	—	7	8
Bile	1	4	15	20
Hæmaglobin	10	7	8	25
Urea—percentage	—	—	1	1
My. tuberculosis	4	—	6	10
Gonococcus	2	—	12	14
Schistosome ova	—	—	9	9
Culture	5	1	9	15
Zondek-Ascheim (Friedman)	1	—	—	1

234. An interesting organism was isolated from the urine of a Goanese who was suffering from an attack of clinical enteric fever. The patient's serum agglutinated flagellar suspensions of *B. typhosus* and *B. paratyphosus* to titres of 1/1280 and 1/320 respectively, probably as a result of T.A.B. inoculation some years previously. The organism recovered from the urine was a motile Gram-negative bacillus showing somatic agglutination to a titre of 1/40 with *B. typhosus* antiserum (titre 1/500 with a homologus O-suspension), no flagellar agglutination occurring. Acid and gas were produced in glucose, mannite, salicin, dulcite, xylone and arabinose, sulphuretted hydrogen was formed, and litmus milk was turned alkaline. No indol was formed. The organism appears to be related to *B. entertidis*. It was agglutinated to a titre of 1/160 flagellar agglutination by the patient's serum during convalescence.

235. An organism of the Friedlander group was isolated in pure culture from the uterine discharge and also from the urine of a woman who ran a prolonged pyrexia (2—3 weeks) following parturition.

236. *D. Serological Examinations.*—

	Europeans.	*Asiatics.*	*Africans.*	*Total.*
Wasserman	22	4	891	917
Kahn	85	33	13,596	13,714
Agglutination tests	15	12	347	374
Van-den Bergh reaction	—	—	36	36

237. *E. Pus and Exudates.*—

	Europeans.	*Asiatics.*	*Africans.*	*Total.*
For *Gonococcus*	71	17	1,639	1,727
For *B. pestis*	2	6	198	206
For *M. lepræ*	—	—	40	40
For Organisms	15	4	607	626
For Culture	16	4	26	46
For Vaccine	7	0	9	16

238. During the course of the year a virulent diphtheroid bacillus was isolated from a fatal case of what was clinically laryngeal diphtheria in an African child. Protection tests were carried out by the intradermal technique and it was shown that the toxin was completely neutralised by stock diphtheria antitoxin (Parke, Davis & Co.). The organism was apparently a true member of the *C. diphtheriae* species, an interesting fact in view of the extreme rarity of true diphtheria in natives of this country; no previous instance of the isolation of a virulent diphtheria bacillus from a native of Uganda appears to have been recorded.

239. *F. Dark Ground Examinations.*—

Europeans.	*Asiatics.*	*Africans.*	*Total.*
0	1	6,638	6,639

240. *G. Sputa.*—

Europeans.	*Asiatics.*	*Africans.*	*Total.*
47	25	658	730

241. *H. Histological Examinations.*—Specimens received for histological examination numbered 262, of which 52 were neoplasms.

Carcinoma			17
Squamous cell		10	
Penis	5		
Lip	2		
Tongue	1		
Maxilla	1		
Vagina	1		
Columnar cell		4	
Bile duct	1		
Pancreas	1		
Salivary gland	1		
Uterus	1		
Spheroidal cell		3	
Breast	3		
Sarcoma			10
Spindle cell		2	
Fibula	1		
Vagina	1		
Giant cell		2	
Thigh	1		
Sternum	1		
Round cell		1	
Ovary	1		
Lympho-sarcoma		1	
Omentum	1		
Melanotic		3	
Groin	1		
Eye	2		
Fibro-sarcoma		1	
Knee-joint	1		
Hæmendothelioma			1
Sternum	1		
Endothelioma			1
Lip	1		
Hæmangioma			1
Scalp	1		
Angioma			1
Orbit	1		
Papillary Cystadenoma			1
Sebaceous gland	1		
Papilliferous Cyst			1
Fibro-Adenoma			4
Breast	2		
Buttock	1		
Umbilicus	1		
Fibroid Tumour			2
Uterus	2		
Cystic Chondroma			1
Knee	1		
Lipoma			1
Arm	1		
"Mixed" Tumour			2
Parotid	2		
Fibroma			6
Popliteal space	1		
Ovary	1		
Scapula	1		
Forehead	1		
Shoulder	1		
Pectoral region	1		
Epulis-Fibroid			1
Jaw	1		
Glioma			1
Cerebrum	1		

242. *I. Stock Vaccines.*—

T.A.B.	1,800 cc.	Gonococcal	1,200 cc.

243. *J. Miscellaneous.*—

	Europeans.	*Asiatics.*	*Africans.*	*Total.*
Cerebro-Spinal fluid	1	0	71	72
For Trypanosomiasis	0	0	601	601
Skin for larvæ	0	0	40	40

244. Of 601 examinations of blood smears and gland punctures for trypanosomiasis, 35 were positive.

245. *K. Post-mortems.*—Post-mortem work on a number of cases with pneumonic symptoms who died shortly after admission to hospital revealed a type of true pneumonic plague which has not been previously recorded in Uganda. In these cases only one lobe, or part of a lobe, was affected as a rule, and in the majority of cases the post-mortem appearance was that of a pneumococcal pneumonia in the stage of grey hepatisation. Virulent plague bacilli were isolated from all cases which were cultured, and it was interesting to note that very few of these organisms were present in smears from the healthy lung tissue, while they were invariably absent from the heart-blood and spleen. One case was examined in which actual isolated nodules were present in both lungs, the central portions of the nodules consisting of white, almost caseous, material containing large numbers of plague bacilli, while the remainder of the lung tissue showed only a minor degree of congestion. Many of these cases gave histories of from one to two weeks' illness, and the impression given was that a strain of relatively low virulence was responsible for this highly localised form of pneumonic plague. Of a total of eighteen post-mortems on cases of pneumonic plague, only three showed the usual picture of scattered areas of hæmorrhagic œdema in both lungs, with numerous organisms in the spleen and blood stream.

246. The following organisms were isolated from post-mortem cases:—

Pneumococcus	11 times.	*B. friedlander*	2 times.
B. pestis	10 ,,	*Streptococcus*	2 ,,
B. typhosus	4 ,,		

PART III.

247. The chemical staff consists of one Chemist and one African Attendant.

248. During the year the following specimens, exhibits, etc., were received for chemical examination:—

Medical Department:—		
Blood	296	
Urines	18	
Milks, human	2	
Gastric contents	9	
Fæces	2	
Concretions	2	
Chloroform	2	
Preservatives	1	
Alcohol	2	
Culture media	1	
Diazo-test solution	1	
Dyes	1	
Ether	1	
Enzyme preparations ...	2—340	
Police Department:—		
Alcoholic liquor	1	
Toxicological	75	
Blood stains	37—113	
Customs Department:—		
Drugs	8—	8
Public Works Department:—		
Incrustations on water piping	3	
Bitumen	1	
Lime	1—	5
Municipal:—		
Water, chemical	32	
Water, bacteriological ...	76	
Water, special examination ...	3	
Milk, cows	50	
Flour	2—163	
Agricultural Department:—		
Flour	2—	2
Veterinary Department:—		
Toxicological	1—	1
TOTAL		632

249. At the request of the Water Works Superintendent, the cause of the corrosion in the Kampala water was investigated. The pipes are of steel. Sections revealed generalized rusting with local areas of intense erosion.

The principal factors responsible were found to be CO_2 in the water and lack of homogeneity in the steel.

Laboratory tests indicated that lime treatment would be a satisfactory remedy for the generalized rusting but would not prevent the galvanic action responsible for the localised erosion.

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250. The following tables give the treatment of European and Asiatic officials :—

(1) Appointments 2,196

(2) The following conditions were treated :—

Caries Simplex	874
Extractions	349
Pyorrhœa	69
Periodontitis	62
Abscess	45
Erosion	91
Gingivitis	36
Pulpitis	47

(3) Conservation Work :—

Silver Amalgams	602
Synthetic Porcelain	184
Oxyphosphate	61
Zinc Oxide	94
Permanent Gutta Percha	23
Temporary Gutta Percha with dressings	254
Scalings with Gum Treatment	361
Zinc Chloride applications	130
Silver Nitrate applications	21
Gold Inlays	16

(4) Prosthetic Work :—

Dentures	56
Repairs to Dentures	102
Pivots	16

(5) The following outstations beyond Entebbe were visited :—

Jinja, three visits ; Masaka, two visits ; Tororo, Mbale, Soroti, Mbarara, Kabale, Masindi. Hoima and Fort Portal, one visit each.

APPENDIX I.

Annual Report of the Government Entomologist for 1933.

MEDICAL WORK.

Mosquito Surveys.

251. Re-surveys of Kampala and Jinja were undertaken and surveys of the environs of the Bukalasa Experimental Station and of the Luzira Central Prison were carried out.

252. A Native Assistant continued work at Kabale until September, when the Government Entomologist visited this township and closed down the survey.

253. *Kampala.*—The number of larvæ of dangerous species of Anophelines has greatly decreased. This is due more to the effect of oiling, rendered possible by the clearing and planting operations, than to the direct effect of permanent measures. There still exist a number of small earth drains, many of which should be filled in, and further permanent measures are desirable, particularly with regard to the ditches. Two areas near the railway station, which had not been included in previous surveys, were found to be breeding dangerous species of Anophelines. Collections of mosquitoes were made in the police lines but the number of collections is as yet insufficient to enable conclusions to be drawn.

254. *Luzira.*—All the breeding places found in this area were in ditches and sand-pits. Results of searches of the swamp were entirely negative; it is possible, however, that after very heavy rain breeding will take place in the short vegetation on the margin of the swamp. The water within the swamp is considered to be too full of organic matter to constitute a danger. Recommendations regarding control of Anophelines in this area have been submitted.

255. *Kigezi.*—The results of further collections made in Kabale township were not such as to modify the recommendations made in the report submitted last year.

256. A brief survey of the rest houses on Lake Bunyonyi showed the presence of adults of *Anopheles funestus* in considerable numbers in several of them. There is little or no doubt that the breeding places of this species are in the clean-water papyrus and grass swamps bordering this lake, but in view of the impracticability of carrying out control measures no extensive search for larvæ was made.

257. Larvæ of *Anopheles gambiae* were found at Lake Mutanda and on the Ntungwe river.

258. *Bukalasa.*—A brief survey of this Government Experimental Station and its environs was made during November. The Anophelines found included *A. gambiae* and *A. funestus*. No major control measures were considered necessary but recommendations for minor anti-mosquito measures have been made.

259. *Jinja.*—A re-survey of Jinja was carried out during November and early December. The permanent control measures begun in 1929 are being continued and the results are extremely promising. No mosquitoes were to be found breeding in the areas where permanent measures had been applied.

Observations and Experimental Work on Mosquitoes.

260. *Namanve Swamp.*—The level of the water in this swamp has fallen considerably and many of the observation pools have dried up. Further observations have confirmed the conclusions drawn last year, and Anophelines have not so far been found in the pools formed when dead trees have been replaced.

261. *Temporary Control by Use of Elephant Grass.*—Owing to an unfortunate misunderstanding the control pits were oiled and more grass added to the experimental pits almost immediately after the report on this experiment had been written. As no other suitable pits were available the experiment had to be abandoned.

262. *Life Histories of Anophelines.*—A series of determinations of the life-histories of the two most dangerous species (*A. gambiae* and *A. funestus*) have been made, under conditions approaching their natural environment, in the experimental pools. The pre-adult life-cycle of *gambiae* was found to vary from eleven to sixteen days, while in two experiments with *funestus* the period was twenty and twenty-one days respectively. These figures are not significantly different from those obtained in the laboratory, but in the case of *gambiae* a single simultaneous pair of determinations in the field and in the laboratory gave a decidedly shorter period in the field than in the laboratory.

263. These figures would suggest that the period between successive applications of oil should not exceed ten days, while in the case of Paris Green (which has no effect on the eggs or pupæ) the period should not exceed seven days. Both these periods are maximum, but as oil remains effective longer than Paris Green, it is possible that the interval between successive oilings might be slightly increased without danger.

264. *Roof Gutters.*—The experiment with an unshaded gutter which was begun last year was continued and no mosquitoes bred in it. Towards the end of the year a further experiment was begun, using gutters under varying conditions of shade. *Aedes aegypti* (the chief carrier of Yellow Fever in West Africa) has bred freely in the shaded gutters but no Anopheline larvæ have occurred.

Rodents and Fleas in Connection with Plague.

265. During the earlier part of the year work was confined mainly to examination of fleas from rats sent in by the Health Officer, Kampala. Results were similar to those obtained from similar collections in 1931 and 1932, and as the 1932 figures have not yet been published they are included here with those for 1933.

266. Of *Rattus rattus* 819 specimens were collected, and of these about 34 per cent. were infested with fleas. The fleas included 38 *Xenopsylla brasiliensis*, 989 *X. cheopis*, 12 *Dinopsyllus lypusus* and 1 *Ctenophthalmus cabirus*. The only field rat caught in considerable numbers was *Arvicanthis abyssinicus*; 741 specimens were examined, of which 7 per cent. were infested with fleas, including 3 *X. brasiliensis*, 14 *X. cheopis*, 40 *Dinopsyllus lypusus*, 1 *D. longifrons* and 1 *C. cabirus*. Of 88 other field rats captured, only 7 bore fleas, which included 1 *X. cheopis* and 6 *D. lypusus*.

267. Identifications were also made of fleas from rats gassed by the staff of the Sanitation Division in the rural areas of Mengo District in the course of plague work. As these rats were in most cases found in huts adjacent to those in which plague had occurred the results have a special interest, but unfortunately the records do not show percentages of rats infested with fleas, since only those infested were recorded:—36 infested *R. rattus* bore 193 *X. brasiliensis*, 20 *X. cheopis* and 1 *Ctenocephalides felis strongylus*, 45 *Mastomys coucha* (multimammate mouse) had 254 *X. brasiliensis* and 21 *X. cheopis;* other species were not taken in sufficient numbers for the results to have any significance, this also being the case with small collections made by the Entomological Section in rural Buganda. There can be little doubt that (as in certain areas of Kenya) *X. brasiliensis* is the principal vector of plague in at least parts of rural Buganda, and there is evidence that the *cheopis* dominance found in Kampala has a very restricted range since in a store constructed of wood and iron on the outskirts of the town *X. brasiliensis* is almost the only flea found on *Rattus rattus*.

268. Small collections of rat-fleas from Jinja and Tororo were identified for the Senior Health Officer, Eastern Province.

269. Towards the end of the year investigations were begun on the habits (particularly nesting-habits) and food of rats. These are proceeding and they show promise of interesting and useful results.

270. Opportunities occurred from time to time to collect squirrels. The ground squirrel, *Euxerus erythropus*, was found to be almost invariably infested with *Ctenocephalides crataepus*, a flea apparently confined to this host, and not to harbour any other fleas; it can almost certainly be acquitted on the charge of carrying plague.

271. Other squirrels were obtained too infrequently for the results to have any significance but no fleas were found on them.

272. Large collections of rat-fleas made by the Medical Officer, Lango, were identified for him; Dr. Barrett has published the results elsewhere.

Tse-tse Surveys.

273. *River Ora, West Nile.*—A survey of this area was carried out during September, the main objective being to investigate a suggestion that the clearing of six miles of the lower course of the Ora would diminish the incidence of *Glossina palpalis* both upstream and on the Nile in the vicinity of the mouth of the Ora. *G. palpalis* was found to be moderately abundant along the Ora, considerably above the stretch which it was suggested should be cleared, and also on the Nile in areas unlikely to be affected by the infestation of the Ora. *G. pallidipes* was also common on the Ora and *G. morsitans* was common in many parts of the area.

274. No evidence that the clearing would have the suggested result was found. It was considered that a less extensive clearing was desirable (on the assumption that population is to remain in this very undesirable area) for the protection of the people, who are living in extremely intimate contact with *G. palpalis*.

275. *Katwe.*—A survey of this area was carried out during March. The conditions are best summarised under (*a*) Lake (*b*) Rivers. Owing to the unusual weather conditions little of the grass had been burned and some difficulty was experienced in traversing the whole area.

(*a*) *Shore of Lake Edward and Katwe Forest.*—The density of fly along the lake shore between Katwe and a point a few miles west of the Kayanja lagoon was very low; fly were found at three points only, all of which were between Katwe and the mouth of the Nyamagasani river. Two of these points were near clumps of *Allophyllus* ("mutete") growing just behind the fringe of reed; *G. palpalis* was found subsequently in these clumps. The main sand-bar was otherwise practically free from fly though conditions appeared suitable for breeding. The absence of fly may have been due to flooding earlier in the year, but should further surveys reveal no additional infestation, more of this shore could be opened for fishing. In any case, the amount of clearing required would be comparatively small.

While on leave in England, the Assistant Entomologist discussed the subject with Dr. Worthington. The latter agreed that the density of fish would be adequate to support three or four times the present population (centred at the Kayanja lagoon) but he emphasized the much greater value of the fisheries at certain points on the east coast.

Excepting a point immediately below the Nyamagasani bridge, where the drier nature of the forest was more suitable for fly, a single fly only was found in the Katwe forest. A cautious advance into the more humid part of the forest was recommended in view of the fact that this area was originally the source from which the Katwe people obtain their food, which has now to be brought from considerable distances.

(*b*) *Rivers.*—The damp forested ravines were all found to contain fly in rather small numbers. All these ravines are a source of danger, especially because they afford the main supply of hut-poles for the population. The formation of small plantations to supply poles was recommended, the forested ravines to remain closed.

The clearings at the upper ends of the hill streams were found to be well sited; in only one case were fly found above them and this was near two patches of dry forest. The wooded upper reaches of these streams have not so far been found to harbour fly, but the incidence of sleeping sickness suggested the possibility of fly occurring there and the District Commissioner kindly allowed one of his boys to continue observations in the area. It was not recommended that any further action be taken in this area at first except that the upper Rwempyo Valley could be reclaimed by clearing at no great cost.

Puparia of *G. palpalis* were found on two occasions in the drier forest on the upper slopes of the ravines.

Kagera River.—A brief survey of the Uganda portions of this river was carried out following that of the Katwe area. No specimens of *G. palpalis* were found, though certain parts of the area appeared suitable for the species.

276. *Experimental Work on Tse-tse.*—The section has co-operated with the European Sleeping Sickness Inspector in his experiments on the trapping of tse-tse; an account of the results up to the end of 1932 was drawn up by Mr. C. W. Chorley and this, after editing, was submitted to Government. This work is being continued. Visits were paid to Nsadzi Isle and to Koja Peninsula in June to inspect the trapping. The fly population of Nsadzi has continued to decrease.

277. The Assistant Entomologist visited Maboko Island in January, accompanied by Mr. C. W. Chorley, to meet the Director of Tse-tse Research, Tanganyika, and the Medical Entomologist, Kenya, in order to see fly conditions in an area much drier than the Uganda islands, to see trapping work being carried out with various types of trap on Maboko, and to discuss programmes of work. The Director of Tse-tse Research subsequently visited Nsadzi and Kimmi islands in order to see the results of trapping under the different conditions in Uganda. The Assistant Entomologist also attended a small and informal conference on tse-tse problems while in London on leave.

278. *Map.*—The map of tse-tse distribution has been kept up to date.

279. *Simulium spp.*—Preliminary experiments on trapping *Simulium damnosum* have been carried out by the Laboratory Assistant. The results, though inconclusive, were decidedly encouraging and further experiments, particularly with reference to the question of attraction by scent, will be made.

280. Further material of adult and early stages of the group have been collected by members of this section and handed to Mr. Gibbins, who is continuing his work on the systematics and bionomics of the group. He concludes, after detailed examination of the specimens from Nsadzi Island mentioned in last year's report, that the black forms mentioned as a second species are merely rubbed individuals of *Simulium adersi.*

East African Conferences on Trypanosomiasis and Medical Research.

281. The Entomologist attended all, and the Government Entomologist all but two, of the meetings of these conferences.

The Annual Report of the Lady Coryndon Maternity Training School, Namirembe, 1933, by Sir Albert Cook.

282. The fact that maternity and child welfare work is an important branch of preventive medicine is not always clearly recognised. The units are the country centres scattered through the Protectorate, and where these are efficiently staffed by qualified midwifes and duly inspected by the Superintendent of the Training School a very real result in preventive as well as in curative medical work is being obtained. In an article by Dr. Oldham in the January, 1934, number of *Africa* (the Quarterly Journal of the International Institute of African Languages and Cultures) on the educational work of Missionary Societies, the gifted author lays stress on the fact that the small village or bush schools, in spite of obvious shortcomings, "Are nevertheless the centres through which new ideas are reaching the masses of the population" and that "under proper supervision they may be the means of effecting large improvements in the general life." What he says of the Christian evangelist may be equally applied, *mutatis mutandis*, to the intelligent midwife. "Her message sets people thinking. By introducing new standards, by its teaching on the family, on marriage, on social obligation, on the duty of kindness and helpfulness, not only to those to whom such consideration is due by tribal custom, but to all the Christian Church is a powerful educative force."

283. Each country centre should become a beacon light of hygienic village life, in the midst of the surrounding insanitary darkness. Till the organisation of a system of Health Visitors, the properly trained midwife should fulfil this function among the women and children, and her technical education should be strengthened in this direction. There are some excellent little books in the vernacular on African Hygiene in village life, *e.g.*, *Akatabo ka Hygiene Yabawala* (Uganda Bookshop), *Okwerinda mu Byomu Bulamu* (Uganda Bookshop) and chapter 32 in *Amagezi Agokuzalisa*, the Government text-book for the Maternity Training Schools (2nd edition now in preparation), and in English, *An Empire Problem*, by Dr. Blacklock, *The Teaching of Healthcraft to African Women*, by Mrs. Donald Fraser, *A Mothercraft Manual for African Women*, by Mrs. Millman, *First Aid in Illness for African Homes*, by Dr. Todd, and *Tropical Hygiene for Schools*, by E. J. Evans.

284. I have laid stress on this fact because humble though the beginning may be of these village maternity and child welfare centres, as they increase in numbers they are going to influence very markedly the question of native population. In many parts of the world the land is over-populated, disease and under-nourishment take their terrible toll of the teeming millions huddled together in the overgrown towns and the grim spectres of unemployment and a population living perilously near the bare subsistence level, stalk through the land.

285. But in Africa large stretches of fertile country cry aloud for population. British East Africa, from Kenya to Northern Rhodesia, has an area of a little over a million square miles with an estimated native population of less than twelve millions. India, with an area less than twice as large supports a population of 318 millions. The Belgian Congo, which includes 900,000 square miles has a population of 8½ millions, while Belgium itself maintains nearly as great a population in an area one-eightieth as large. French Equatorial Africa, with an area three times as large as France, has an estimated population of less than three millions.

286. The foregoing remarks will at least have made it evident that in our Maternity Training Schools the object should not be to aim at a narrow objective, the training of girls, more or less by rule of thumb, to safely conduct the labour of the parturients who consult them, but what is of far greater importance to teach them such knowledge, and in such a way as to ensure that each Maternal and Child Welfare station becomes a centre of health propaganda.

287. The midwives may not understand the meaning of the word "Eugenics" but for all that they are among its chief followers even if unconsciously, for did not Sir Francis Galton, with whom began its science and practice 50 years ago, define Eugenics as the study of agencies under social control that may improve or impair the racial qualities of future generations either physically or mentally. "Agencies under social control": May not even the humblest midwife, if properly taught and controlled, carry out her share in this?

288. For instance, a more insanitary type of dwelling than the native hut as it is found in many parts of the continent, it would be difficult to conceive. It is generally without light or ventilation. The mud walls and earth floor are a breeding ground for disease-carrying insects, while the grass roof provides a harbourage for rats. In this way, plague, tuberculosis, pneumonia and relapsing fever is largely a question of housing. No provision is made in the usual native village for the disposal of excreta and refuse. Alimentary diseases are a further menace to African peoples. Dysentery is widespread. Helminthic diseases of various kinds, and in particular ancylostomiasis, while not a large factor in increasing the number of deaths, have a generally debilitating effect on the population.

289. Until these insanitary conditions are put right the direct warfare with disease is an almost hopeless struggle. Attempts to combat infant mortality, which is the crying evil of Africa, are a waste of effort if an increase in population merely provides more persons to be swept away by epidemics.

290. Some of the small country centres should at least give an object lesson of what a model dwelling should be with their good lighting and ventilation and their cleansible floors and walls and rat-proof roofs.

291. Example is better than precept but best of all when both are combined in the case of the 2,000 mothers safely delivered in our Central Institute and Country Centres during the year. And it pays from a hygienic point of view to teach the mothers, both expectant and actual, for the hand that rocks the cradle rules the world.

292. Perhaps one of the best methods of ensuring this wider instruction of students in the maternity schools would be for the Board of Examiners to set one queston out of the eight in the two written papers on Hygiene and Sanitation. As mentioned above, it forms a subject in the approved text-book.

Lady Coryndon Training School.

293. *Staff*:—

Consultant Superintendent	Lady Cook, O.B.E.
Superintendent and Inspector of Centres ...	Miss M. S. Budd.
Nursing Sisters	Miss Milnes Walker.
	Miss Norris.
Lecturer and Senior Medical Officer ...	Sir Albert Cook, C.M.G., O.B.E., M.D.
Medical Officers	Dr. R. Y. Stones, M.C., M.D. M.R.C.P.
	Dr. A. T. Schofield, M.R.C.S., L.R.C.P.
	Dr. Margaret B. Cook, M.B., B.S.

294. Thirty students have been in residence during the year, of whom nine passed the Government qualifying examination, three failed (one of these twice). With some brilliant exceptions, the rank and file have not done so well during the last three years but the five qualified nurses from Ndeje Training College who are now completing their year's training in the school are, as indeed was expected, head and shoulders above the rest. Not only the morale, but the morals of the school have shown a steady and sustained improvement during the last few years and the discipline leaves little to be desired, while for cleanliness, keenness on instruction, obedience and general alertness they are second to none in the Protectorate.

295. The portal of admission, in addition to bringing certificates of good character, is Standard IV, E.V.

296. Midwives trained in this school are also working under Government on the Sese Islands and in Jinja District and others are being supplied for Hoima and Entebbe.

297. A new and very charming little Centre was opened at Kabwoke in a densely populated district (Shema) in Ankole in July and seems to be doing well.

298. A second new Centre was opened at Hoima in August and a third is completing at Lira in the Lango District.

299. As in former years, we gratefully acknowledge the unstinted and generous help given by Government officials. Sir Bernard and Lady Bourdillon have visited the chief centres and greatly cheered the local staffs by their evident sympathy and interest. Lady Bourdillon kindly gave away the certificates to the successful candidates of the year from the Maternity Training School, the Nurses Training College and the Homecraft Training School, on November 25th.

300. If we have lost an old and valued friend in Major Keane, C.M.G., the late Director of Medical and Sanitary Services, his successor, Dr. Kauntze, M.B.E., is walking in his footsteps. To Dr. Mitchell, O.B.E., Medical Superintendent of Mulago Hospital, we owe, not only grateful thanks in his conduct of the bi-annual examinations as Chairman of the Board of Examiners, but also for a fine sense of camaraderie on Obstetric Research work where his keenness has whetted our own. Dr. Holliday, too, also helped us much in the Examinations and Mr. Cox and Mr. Bruton and Dr. Boase attended our Committees.

The Nurses Training College, Ndeje.

301. *Staff*:—

Dr. Barbara Grinling, M.B., B.S.
Sister Tutor.—Miss Renshaw.
Nursing Sister.—Mrs. Pye.

302. The great event of the year has been the holding of the first examination (under the new scheme) for fully qualified native female nurses. The syllabus used was that set forth by the General Nursing Council for England and Wales. The full course is three years, of which the first two-and-a-half years are spent at Ndeje and the last six months doing surgical work at Mengo.

303. The examination was held in May, the examiners being Dr. Grinling, the Acting Matron of Mulago Hospital and the Matron of Mengo Hospital. All six candidates passed and were reported on very favourably by the examiners. Of the six, five have entered the Maternity Training School to take the Certificate there and thus will be doubly qualified as Nurses, with a full three years' training and as Certified Midwives. The goal for which we are working is a simple State Registration of Nurses (male and female) in Uganda, the essence of which is a qualifying examination held by a Government Board of Nursing Examiners, of candidates from

whatever source, who have fulfilled the conditions of training laid down and succeeded in satisfying the examiners, and names will be recorded in a special Register kept at the Director of Medical Services' office at Entebbe. While nothing definite has been fixed, events are shaping themselves in this direction. It has long been the desire of Lady Cook to whose vision and inspiration the inception of the work is due.

304. Twenty-four students have been in residence in 1933. The discipline has been good and progress has been steady under the superintendentship of Dr. Grinling. Towards the close of the year Miss Renshaw, who had had special training while on extended leave in England, was appointed as a Sister Tutor, and her added powers will be bound to tell during the coming years. The health of the students has been good, the environment of the College almost ideal and, a rather important point, the expenses have been kept down to a minimum.

305. The Chapel is a central feature not only in the lay-out of the buildings but in the Spiritual life of the students. The future is full of promise.

APPENDIX III.

The Annual Report of the Nsambya Maternity Training School, for 1933, by Reverend Mother Kevin, M.B.E.

306. *The Training School.*—The Nsambya Maternity Training School continues steadily to make good progress. This year has seen a very marked improvement in the general tone of the school and in the achievements of the students. During the last half-year, the school has done splendidly under the able direction of the Mission lady doctor, Doctor M. T. Wilson, who devotes a very great part of her time not only to the necessary lectures and instructions but also by very practical and useful lessons to the students over and above her appointed time. With the greater facility for education we are now able to raise the standard of the school, and only those holding certificates from the E.V. School or Middle School are allowed to enter. In spite of this restriction, applications are as numerous as ever. There have been 25 students in training throughout the year, and there is a long waiting list. This year there have been fourteen successful candidates and only one failure. The girls show a real devotion and aptitude for the work. The training is strict and very thorough, especially in all that relates to cleanliness, devotion to duty and personal responsibility, and in most cases the students respond wholeheartedly; those who are not well-disposed and lacking in any of the essential qualities required disappear after a few weeks' trial, to give place to more suitable subjects. During the year a small ward for young children, attached to the private hospital, has been opened at Nsambya. It not only supplies attention and care to sick infants and children, but gives the students of the maternity school much valuable experience and provides an opportunty of giving the mothers a little help in the care of their babies, and encourages a greater post-natal attendance. From the various Centres we have received excellent reports of the Midwives which do justice to the training they have received.

307. *Native Medicine.*—From all the Centres reports reach us regarding the taking of native medicine. It still continues very popular in the less civilized parts of the country, being one of those native customs which it will doubtless take many years to eradicate. However, we notice that at the large Centres, and especially those near the towns and large hospitals, the people are slowly but surely beginning to realise the fatal results of this medicine and the great advantage of the ante-natal treatment. This is especially noticeable at Nsambya where the majority of the natives are better educated. However, even these will often resort to native medicine when complications set in, and it is not always easy to decide how far this medicine is responsible for the miscarriages and maternal deaths.

308. *Syphilis.*—Syphilis is, unfortunately, still exercising a strong influence over the lives of the people of this country, and it is only slowly and gradually, but we hope surely and effectively, that it will be stamped out. The women are slow to submit themselves to examination and treatment. The ordinary native will not come for medical treatment until it is too late to cure him. This is experienced in all branches of medical work in Uganda and applies especially to those afflicted with syphilis. It is only as the education of the country gradually raises the mentality of the people that they will become more reasonable and more trustful of European treatment and methods. In many of the Centres, excellent results have been obtained and on the whole it appears evident that the number of deaths due to syphilis has slightly decreased and consequently the number of strong healthy children much augmented. Good results in this direction are by no means lacking, and they call for persevering efforts in the future.

309. *Child Welfare.*—It cannot be said that the progress in child welfare—strictly so called—has been great or striking. The people are not yet sufficiently accustomed to our methods of child welfare to adopt them to any appreciable degree. The same ignorance which prevents adults from applying to the hospitals and centres for treatment in small ailments holds them back from approaching the centres to obtain assistance for their children, and naturally in the case of infants this neglect is far more disastrous, and often fatal. In many cases, the people live some distance from the centres and are not inclined to carry a plump healthy baby several miles for advice and treatment unless the child displays some serious symptoms, or, what is more to the point, symptoms which the mother recognises as serious. It must be admitted that even those mothers who live near do not trouble as a rule to avail themselves of the free treatment offered. This being the case, the midwife can only do her best to advise the mothers while they are actually under her direct supervision, and encourage them to return often. When the women are better educated they more readily understand the benefits of post-natal attendance and they may often be encouraged by their husbands and by the native chiefs of the district if these are well disposed towards the centres. For the present, progress in this important branch of maternity work is slow, and depends to a very great extent on the personal character and ability of the midwife at each centre, and we must look for the greatest assistance from those who have the work of training and educating the girls and young women before they become mothers.

310. *Out-Centres.*—Many of the out-centres are carrying on a marvellous amount of good work which is most encouraging and edifying—while others again have been falling off either much or little owing to various causes, generally either to poverty or ignorance of the people of the district or the want of assistance from the chiefs. In every place where the centre is attached to the Mission hospital and under continual supervision of the nursing sisters and Mission doctor, the work continues to progress steadily. In other centres a high standard may be reached and maintained through the zealous and successful supervision of a Father Superior, the personal devotion and ability of the midwife and the co-operation of the native chief, as is especially the case at Bikira, Mitala Maria, Budaka and Lwala. Others of the centres have not been satisfactory this year, and it may even be advisable to consider the temporary or permanent closing of some of them, namely, Budini and Butiti for the reasons given below.

311. *Budini* is already temporarily closed of necessity. The building is absolutely out of repair. This centre has been doing nothing for several years, and it would therefore be a waste of money to build a new ward and dispensary. Later, the Sisters may open at Budini, and in that case it might be possible to re-open and work up a good centre here.

312. *Butiti*, a very distant centre in Toro, has been struggling to justify its existence for some time past, and has not done badly considering its position and the poverty and ignorance of the people. Maternity work in this part of the country seems to be very slow. It does not appeal to the people and is, moreover, in exact opposition to their own particular views and customs. They would choose to let mother and child die in the native hut within sight of the hospital or centre, rather than cross the road and seek assistance. The Father Superior of the Mission at Butiti has had great difficulty in providing the medicines needed for the centre, and in spite of his most strenuous efforts and the untiring devotion of one of our best midwives for the last three years, it has not been possible to make a success of this centre. In addition to this there is a Government dispensary quite close and we understand that a Government maternity ward will be attached to the dispensary if this centre is closed.

313. *New Centres.*—During the year two centres have been opened. A permanent maternity hospital is being built at Namilyango, but the work has been slow and costly. The actual building is now completed and is being furnished. There has been a midwife stationed there for some months, but so far, as there was not even a temporary hut, no in-patients could be received. We hope to have a very good report of this centre for next year.

314. The second centre is that at Ngora, which has been re-opened since the Sisters have a Convent and Mission School here. The centre has only been open for six months and considering that the people are very backward and timid in this part the report received is most satisfactory. There is much syphilis, and native medicine is taken continually. The wonderful kindness and patience of the midwife has had much to do with the progress of this centre, and she has had the additional difficulty of learning a new language and a very hard one. The Sisters are endeavouring to instruct the married women and young girls who come to the Mission and already have a class of over 40 of these who come twice a week for ante- and post-natal instruction. They are thus, with the aid of the midwife, gradually helping the people to overcome their natural fear and ignorance and paving the way for an even greater attendance at the centre.

315. *Conclusion.*—In conclusion, we feel that this work is continuing to fulfil the end for which it has been started and carried on, and to fill an important place in the general welfare of the country. We are not discouraged by the failure of one or two centres, but are the more encouraged to concentrate our efforts to extend the work where it is most likely to flourish and afford assistance to the greatest number of people. We realise that very much indeed depends on the standard of our training school and are therefore sparing no pains to train our girls to become good, efficient and conscientious midwives, and to provide them with suitable class-rooms and dormitories, and giving excellent teachers, instructors and supervisors and every possible assistance in their work. We trust that this school may continue to progress in the good work which it has begun and so far accomplished.

Table I.

Sanctioned Establishment, 1933.

316. The establishment for 1933, as sanctioned in the Estimates, was as follows:—

ADMINISTRATIVE DIVISION.

Director of Medical and Sanitary Services.	European Clerk.
Deputy Director of Medical Service.	European Storekeeper.
Confidential Clerk.	Asiatic Assistant Storekeeper.
Office Superintendent.	15 Asiatic Clerks.

SPECIAL APPOINTMENTS.

1 Resident Surgical Officer.	1 Dental Surgeon.

MEDICAL DIVISION—GENERAL.

3 Senior Medical Officers.	1 Asiatic Civil Surgeon.
24 Medical Officers.	2 Senior Sub-Assistant Surgeons.
1 Pharmacist.	21 Sub-Assistant Surgeons.
2 European Hospital Superintendents.	1 Asiatic Assistant Pharmacist.
2 European Assistant Superintendents and Dispensers.	2 Asiatic Cooks for European Hospitals.
	1 Asiatic Cook for Asiatic Hospital.

NURSING STAFF.

2 Senior Nursing Sisters.	2 Asiatic Nurses.
1 Lady Steward.	1 Asiatic Probationer.
18 Nursing Sisters.	

SANITATION DIVISION.

1 Deputy Director of Sanitary Service.	7 European Sanitary Inspectors.
2 Senior Health Officers.	2 Asiatic Sanitary Inspectors.
5 Health Officers.	

LABORATORIES DIVISION.

1 Senior Bacteriologist.	1 Analytical Chemist.
2 Assistant Bacteriologists.	2 European Laboratory Assistants.

MEDICAL SCHOOL, MULAGO.

1 Medical Superintendent and Principal, Medical School.	1 Medical Officer.

AFRICAN ESTABLISHMENT.

15 Senior African Medical Assistants (African Civil Service).	1 African Teacher at Mulago School.
3 African Clerks (African Civil Service).	

A varying number of African staff, including Senior Medical Assistants, Medical Assistant Attendants, Learners, Plague Inspectors, Vaccinators, Gland Examiners for Sleeping Sickness, Clerks, Interpreters, Headmen, Cooks, Native Nurses and Learners, and also menial staff at all hospitals.

Table II.

317. **Actual Expenditure for the Year:—**

	£	shs.	cts.
Personal Emoluments	85,149	17	12
Other Charges:—			
Medical, surgical and dental stores	13,095	12	75
Renewals of furniture and equipment of hospitals	2,962	7	48
Upkeep of European and Asiatic hospitals	1,101	5	95
Upkeep of Native hospitals	5,116	13	41
Upkeep of Lunatic Asylum	282	11	68
Sanitation Division	4,825	18	56
Miscellaneous services (including motor and bicycle allowances, internal transport, water charges, courses of instruction to medical staff, telephone rentals, etc.)	20,167	9	14
	£132,701	16	09

Medical Education—Medical School, Mulago.—	£	shs.	cts.
Personal emoluments	2,293	7	63
Other charges	223	3	12
	£2,516	10	75

Special Expenditure.—	£	shs.	cts.
Motor vans for sanitary inspectors	217	7	63
Ant-malarial measures—Afforestation	746	9	16
	£963	16	79

Grants to Missions:—	£	shs.	cts.
Contribution to Lady Coryndon Maternity School and grants to Missions for maintenance of midwifery centres and midwives	2,260	0	00
Grants to Church Missionary Society for native training	250	0	00
Leprosy relief measures	1,348	19	20
	£3,858	19	20

Supernumerary Staff.	£	shs.	cts.
Personal emoluments	3,669	14	89
Other charges	445	5	45
	£4,115	0	34

Revenue.

318. The total amount of revenue collected as hospital fees, sales of medicines and surgical stores, registration fees and re-imbursements on account of medical services was as follows:—

	£	shs.	cts.
Hospital fees, sales of medicines and surgical stores, registration fees ...	11,130	11	65
Reimbursements from Kenya and Uganda Railways and Harbours on account of medical and sanitary services	998	1	23
Contributions from Lukikos towards cost of medical stores for sub-dispensaries	5,926	0	00
	£18,054	12	88

Table III.

Return of Statistics of Population.

319. The only statistics available are embodied in the Blue Book.

Table IV.

Meteorological Return.

320. All available information under this head is embodied in the Blue Book.

Tables V and VI.

Return of Diseases and Deaths for the Year 1933.

DISEASES.	Table V.					Table VI.
	Remaining in Hospital at end of 1932.	Yearly Admissions.	Total Cases Treated.	Total Deaths.	Remaining in Hospital at end of 1933.	All Cases including both In- and Out-Patients.
I. Epidemic, Endemic, and Infectious Diseases.						
1. Enteric Group—						
(*a*) Typhoid Fever	2	29	31	10	1	30
(*b*) Paratyphoid A	...	1	1	...	...	1
(*c*) Paratyphoid B	...	5	5	2	...	6
(*d*) Type not defined	1	8	9	3	...	9
2. Typhus	12	140	152	19	2	140
3. Relapsing Fever	10	446	456	14	10	1,387
4. Undulant Fever	...	2	2	...	...	2
5. Malaria—						
(*a*) Tertian	3	211	214	8	2	1,086
(*b*) Quartan	1	188	189	2	2	829
(*c*) Æstivo-autumnal	20	1,341	1,361	29	22	6,089
(*d*) Clinical	13	1,400	1,413	18	30	40,316
(*e*) Mixed Infections	1	57	58	...	...	277
(*f*) Cachexia	...	2	2	...	...	105
(*g*) Blackwater	...	30	30	10	1	88
6. Smallpox	...	...	...	...	...	...
Alastrim	...	...	...	...	...	...
7. Measles	1	113	114	...	2	655
8. Scarlet Fever	...	...	...	...	...	...
9. Whooping Cough	2	75	77	8	1	2,839
10. Diphtheria	...	1	1	1	...	1
11. Influenza	3	762	765	9	11	9,688
12. Miliary Fever	...	...	...	...	...	...
13. Mumps	...	41	41	...	...	392
14. Cholera	...	...	...	...	...	...
15. Epidemic Diarrhœa	...	...	...	...	...	...
16. Dysentery—						
(*a*) Amœbic	6	211	217	11	11	446
(*b*) Bacillary	5	213	218	7	1	426
(*c*) Undefined or due to other causes	2	74	76	7	2	2,245
17. Plague—						
(*a*) Bubonic	...	29	29	23	1	36
(*b*) Pneumonic	...	25	25	23	...	25
(*c*) Septicæmic	...	6	6	5	...	6
(*d*) Undefined	...	1	1	1	...	15
18. Yellow Fever	...	...	...	...	...	...
19. Spirochætosis ictero-hæmorrhagica	...	1	1	...	...	1
20. Leprosy	7	106	113	...	6	2,227
21. Erysipelas	...	14	14	...	...	21
22. Acute Poliomyelitis	...	3	3	2	...	3
23. Encephalitis Lethargica	1	6	7	4	...	6
24. Epidemic Cerebro-Spinal Fever	2	45	47	14	4	82
25. Other Epidemic Diseases—						
(*a*) Rubeola (German Measles)	...	11	11	...	...	33
(*b*) Varicella (Chicken-pox)	5	235	240	...	9	1,403
(*c*) Kala-azar	...	...	...	...	...	...
(*d*) Phlebotomus Fever	...	...	...	...	...	...
(*e*) Dengue	...	...	...	...	...	1
(*f*) Epidemic Dropsy	...	...	...	...	...	...
(*g*) Yaws	70	1,957	2,027	14	139	49,546
(*h*) Trypanosomiasis	30	161	191	11	29	695
(*i*) P.U.O.	7	67	74	2	2	1,629
26. Glanders	...	...	...	...	...	...
27. Anthrax	...	...	..	...	...	4
28. Rabies	...	...	...	...	...	...
29. Tetanus	...	1	1	1	...	1
30. Mycosis	...	...	...	...	...	1
31. Tuberculosis, Pulmonary and Laryngeal	12	220	232	53	18	719
32. Tuberculosis of the Meninges or Central Nervous System	...	6	6	...	...	7
33. Tuberculosis of the Intestines or Peritoneum	1	3	4	4	...	3
34. Tuberculosis of the Vertebral Column	...	8	8	2	2	12
35. Tuberculosis of Bones and Joints	1	14	15	2	2	27
36. Tuberculosis of other organs—						
(*a*) Skin or Subcutaneous Tissue (Lupus)	1	2	3	...	...	2
(*b*) Bones	...	...	...	...	...	2
(*c*) Lymphatic System	1	4	5	1	..	6
(*d*) Genito-urinary	...	2	2	1	...	4
(*e*) Other organs	...	2	2	1	...	3
37. Tuberculosis disseminated—						
(*a*) Acute	...	4	4	1	1	4
(*b*) Chronic	...	6	6	1	...	18
38. Syphilis—						
(*a*) Primary	28	496	524	...	25	8,892
(*b*) Secondary	27	624	651	3	35	17,468
(*c*) Tertiary	35	575	610	18	34	31,517
(*d*) Hereditary	7	224	231	27	5	13,758
(*e*) Period not indicated	...	6	6	...	...	142
(*f*) Latent	...	5	5	...	...	441
39. Soft Chancre	2	94	96	...	6	1,332

Tables V and VI.—*contd.*

DISEASES.	Table V.					Table VI.
	Remaining in Hospital at end of 1931.	Yearly Admissions.	Total Cases Treated.	Total Deaths.	Remaining in Hospital at end of 1932.	All Cases including both In- and Out-Patients
I. Epidemic, Endemic, and Infectious Diseases.—*contd.*						
40. A.—Gonorrhœa and its complications	45	668	713	7	44	9,568
B.—Stricture	6	204	210	9	8	419
C.—Stricture and Extravasation	1	48	49	16	2	81
D.—Gonorrhœal Ophthalmia	...	60	60	1	1	200
E.—Gonorrhœal Arthritis	1	58	59	...	2	329
F.—Salpingitis, etc.	2	28	30	1	...	45
G.—Granuloma Venereum	1	19	20	3	1	60
41. Septicæmia	...	28	28	14	2	41
42. Other Infectious Diseases	...	5	5	...	1	13
II. General Diseases not mentioned above.						
43. Cancer or other malignant Tumours of the Buccal Cavity	...	2	2	2	...	5
44. Cancer or other malignant Tumours of the Stomach or Liver	...	5	5	1	...	5
45. Cancer or other malignant Tumours of the Peritoneum Intestines, Rectum	...	5	5	2	...	5
46. Cancer or other malignant Tumours of the Female Genital Organs	...	12	12	3	2	12
47. Cancer or other malignant Tumours of the Breast	1	1	2	...	...	2
48. Cancer or other malignant Tumours of the Skin	...	5	5	...	1	6
49. Cancer or other malignant Tumours of organs not specified	...	13	13	7	...	21
50. Tumours non-malignant	7	78	85	3	8	210
51. Acute Rheumatism	2	20	22	...	1	293
52. Chronic Rheumatism	...	65	65	1	1	5,803
52A. Myalgia	3	234	237	...	5	41,634
53. Scurvy (including Barlow's Disease)	...	1	1	...	...	1
54. Pellagra	...	1	1	...	...	1
55. Beri-Beri	...	...	...	...	...	5
56. Rickets	...	3	3	...	...	9
57. Diabetes (not including Insipidus)	...	2	2	1	1	2
58. Anæmia—						
(*a*) Pernicious	3	16	19	10	...	57
(*b*) Other Anæmias and Chlorosis	3	69	72	7	2	624
59. Diseases of the Pituitary Body	...	2	2	...	1	2
60. Diseases of the Thyroid Gland—						
(*a*) Exophthalmic Goitre	...	...	...	...	...	6
(*b*) Other diseases of the Thyroid gland, Myxœdema	...	..	...	...	...	1
(*c*) Others	...	3	3	...	...	7
61. Diseases of the Para-Thyroid Glands	...	1	1	...	...	1
62. Diseases of the Thymus	...	...	...	...	...	...
63. Diseases of the Supra-Renal Glands	...	...	...	...	...	...
64. Diseases of the Spleen	1	44	45	2	1	2,728
65. Leukæmia—						
(*a*) Leukæmia	...	3	3	2	...	3
(*b*) Hodgkin's Disease	...	1	1	...	...	1
66. Alcoholism	...	1	1	...	...	2
67. Chronic poisoning by mineral substances (leads, mercury, etc.)	...	1	1	...	...	2
68. Chronic poisoning by organic substances (morphia, cocaine, etc.)	...	...	...	...	...	...
69. Other general diseases—						
Auto-intoxication	...	...	...	...	...	1
Purpura Hæmorrhagica	...	...	...	...	...	...
Hæmophilia	...	2	2	...	...	3
Diabetes Insipidus	...	2	2	1	...	2
Others	...	7	7	1	...	16
III. Affections of the Nervous System and Organs of the Senses.						
70. Encephalitis (not including Encephalitis Lethargica)	1	7	8	1	...	8
71. Meningitis (not including Tuberculous Meningitis or Cerebro-spinal Meningitis)	...	37	37	32	1	39
72. Locomotor Ataxia	...	1	1	...	...	2
73. Other affections of the Spinal Cord	2	17	19	2	1	22
74. Apoplexy—						
(*a*) Hæmorrhage	1	13	14	7	...	19
(*b*) Embolism	...	2	2	...	...	2
(*c*) Thrombosis	...	12	12	2	...	18
75. Paralysis—						
(*a*) Hemiplegia	1	26	27	1	...	50
(*b*) Other Paralyses	2	33	35	...	5	73
76. General Paralysis of the Insane	...	1	1	...	...	1
77. Other forms of Mental Alienation	4	83	87	6	1	106
78. Epilepsy	1	53	54	6	5	241
79. Eclampsia Convulsions (non-puerperal) 5 years or over	...	...	...	...	...	...
80. Infantile Convulsions	...	...	...	...	...	2

Tables V and VI—*contd.*

DISEASES.	Table V.					Table VI.
	Remaining in Hospital at end of 1931.	Yearly Admissions	Total Cases Treated.	Total Deaths.	Remaining in Hospital at end of 1932.	All Cases including both In- and Out-Patients.
III. Affections of the Nervous System and Organs of the Senses—*continued.*						
81. Chorea	...	...	...	...	...	1
82. A.—Hysteria	...	5	5	...	...	13
B.—Neuritis	...	16	16	...	...	136
C.—Neurasthenia	...	6	6	...	...	34
83. Cerebral Softening	...	2	2	...	...	
84. Other affections of the Nervous System, such as Paralysis Agitans, Headache, Neuralgia, Insomnia, etc.	3	72	75	...	1	12,868
85. Affections of the Organs of Vision—						
(*a*) Conjunctivitis	3	163	166	...	6	31,410
(*b*) Trachoma	4	130	134	...	4	5,515
(*c*) Tumours of the Eye	...	1	1	...	...	75
(*d*) Iritis	...	23	23	...	1	636
(*e*) Other affections of the Eye	3	116	119	...	1	2,406
86. Affections of the Ear or Mastoid Sinus—						
(*a*) Otitis Media	2	100	102	2	1	7,924
(*b*) Others	1	39	40	...	...	4,111
IV. Affections of the Circulatory System.						
87. Pericarditis	...	4	4	2	...	5
88. Acute Endocarditis	...	5	5	3	...	6
89. Angina Pectoris	...	12	12	...	...	14
90. Other Diseases of the Heart—						
(*a*) Valvular—						
Mitral	4	47	51	10	4	138
Aortic	1	11	12	2	...	33
Tricuspid	...	...	...	...	...	...
Pulmonary	...	...	...	...	...	...
Mixed or unspecified	...	11	11	3	1	314
(*b*) Myocarditis	...	9	9	2	1	41
D.A.H.	...	24	24	4	...	419
Others	...	21	21	5	...	125
91. Diseases of the Arteries—						
(*a*) Aneurism	...	5	5	1	1	26
(*b*) Arterio-Sclerosis	...	1	1	...	...	3
(*c*) Other diseases	...	1	1	...	...	5
92. Embolism or Thrombosis (non-cerebral)	...	4	4	...	...	5
93. Diseases of the Veins—						
Hæmorrhoids	1	32	33	...	...	164
Varicose Veins	...	3	3	...	1	30
Phlebitis	...	2	2	...	...	3
94. Diseases of the Lymphatic System—						
Lymphangitis	...	4	4	...	...	62
Lymphadenitis, Bubo (non-specific)	6	172	178	1	5	2,230
Others	...	15	15	1	...	83
95. Hæmorrhage of undetermined cause	...	2	2	1	1	11
96. Other affections of the Circulatory System	2	15	17	1	...	64
V. Affections of the Respiratory System.						
97. Diseases of the Nasal Passages and accessory sinuses—						
Adenoids	...	15	15	...	...	108
Polypus	1	4	5	...	...	10
Rhinitis	1	3	4	...	...	247
Coryza	...	45	45	...	...	21,298
Others	1	8	9	1	...	1,105
98. Affections of the Larynx—						
Laryngitis	1	17	18	...	1	1,357
Tracheitis	1	26	27	...	2	10,340
99. Bronchitis—						
(*a*) Acute	7	284	291	3	4	22,890
(*b*) Chronic	6	177	183	10	4	29,178
100. Broncho-Pneumonia	5	341	346	63	12	680
101. Pneumonia—						
(*a*) Lobar	33	772	805	184	21	1,260
(*b*) Unclassified	2	144	146	38	2	1,869
102. Pleurisy	2	104	106	1	6	991
102A. Empyema	2	17	19	9	3	22
103. Congestion of the Lungs	...	2	2	...	...	2
104. Gangrene of the Lungs	...	1	1	1	...	1
105. Asthma	2	62	64	1	1	790
106. Pulmonary Emphysema	...	4	4	1	...	5
107. Other affections of the Lungs—						
Pulmonary Spirochætosis	...	3	3	...	...	3
Others	1	10	11	...	...	1,158
VI. Diseases of the Digestive System.						
108. A.—Diseases of the Teeth or Gums—						
Caries	...	25	25	...	...	5,108
Pyorrhœa	...	6	6	...	...	1,069
Others	...	9	9	...	...	547

Tables V and VI.—*contd.*

DISEASES.	Table V. Remaining in Hospital at end of 1931.	Yearly Admissions.	Total Cases Treated.	Total Deaths.	Remaining in Hospital at end of 1932.	Table VI. All Cases including both In- and Out-Patients.
VI. Diseases of the Digestive System—*continued.*						
B.—Other affections of the Mouth—						
Stomatitis	1	53	54	...	...	6,848
Glossitis	...	3	3	...	...	65
Others	1	11	12	1	...	119
109. Affections of the Pharynx or Tonsils—						
Tonsilitis	2	98	100	1	2	2,525
Pharyngitis	...	14	14	...	1	3,059
Others	...	13	13	...	...	522
110. Affections of the Œsophagus	...	...	...	...	...	1
111. A.—Ulcer of the Stomach	...	5	5	1	...	11
B.—Ulcer of the Duodenum	...	4	4	1	...	4
112. Other affections of the Stomach—						
Gastritis	2	23	25	...	...	879
Dyspepsia	...	85	85	2	...	11,494
Others	1	19	20	...	...	3,264
113. Diarrhœa and Enteritis—						
Under two years of age	1	37	38	1	1	4,387
114. Diarrhœa and Enteritis—						
Two years of age and over	3	206	209	11	...	12,399
Colitis	...	7	7	1	1	1,142
Ulceration	...	...	...	...	...	23
114a. Sprue	...	...	...	...	...	1
115. Ankylostomiasis	8	355	363	17	17	1,021
116. Diseases due to Intestinal Parasites—						
(*a*) Cestoda (Taenia)	...	192	192	...	...	2,957
(*b*) Trematoda (Flukes)	...	3	3	...	...	9
(*c*) Bilharzia	...	24	24	1	1	81
(*d*) Nematoda (other than Ankylostoma)—						
Ascaris	...	160	160	2	5	1,481
Trichocephalus dispar.	...	...	...	...	...	1
Trichina	...	1	1	...	1	1
Dracunculus	6	142	148	...	7	1,402
Strongylus	...	...	...	...	...	...
Oxyuris	...	...	...	...	...	3
(*e*) Coccidia	...	...	...	...	...	...
(*f*) Other parasites	...	6	6	...	1	31
(*g*) Unclassified	1	4	5	1	...	8
117. Appendicitis	...	45	45	4	1	48
118. Hernia	12	327	339	27	11	724
119. A.—Affections of the Anus and Rectum—						
Fistula	4	30	34	1	1	58
Others	...	19	19	...	5	70
B.—Other affections of the Intestines—						
Enteroptosis	...	8	8	6	...	10
Constipation	...	123	123	3	...	25,844
Others	...	3	3	2	...	3
120. Acute Yellow Atrophy of the Liver	...	1	1	...	...	1
121. Hydatid of the Liver	...	1	1	...	...	1
122. Cirrhosis of the Liver—						
(*a*) Alcoholic	...	7	7	6	...	9
(*b*) Other forms	4	17	21	2	2	19
123. Biliary Calculus	...	...	...	...	...	1
124. Other affections of the Liver—						
Abscess	...	15	15	1	1	17
Hepatitis	...	22	22	1	2	60
Cholecystitis	...	7	7	...	1	12
Jaundice	...	31	31	7	2	442
Others	...	3	3	...	...	29
125. Diseases of the Pancreas	...	...	...	...	...	...
126. Peritonitis (of unknown cause)	...	16	16	8	1	17
127. Other affections of the Digestive System	1	48	49	2	1	6,039
VII. Diseases of the Genito-Urinary System (non-Venereal).						
128. Acute Nephritis	6	85	91	10	4	142
129. Chronic Nephritis	2	19	21	12	1	48
130. A.—Chyluria	...	2	2	1	...	2
B.—Schistosomiasis	...	14	14	3	...	25
131. Other affections of the Kidneys and Ureters—						
Pyelitis	...	6	6	1	1	15
Others	...	7	7	...	...	48
132. Urinary Calculus	...	...	...	...	...	2
133. Diseases of the Bladder—						
Cystitis	4	54	58	2	3	219
Others	...	12	12	...	...	27
134. Diseases of the Urethra—						
(*a*) Stricture	...	47	47	1	1	59
(*b*) Others	...	9	9	2	...	34
135. Diseases of the Prostate—						
Hypertrophy	...	4	4	...	...	4
Prostatitis	...	4	4	...	...	5

Tables V and VI—*contd.*

DISEASES.	Table V.					Table VI.
	Remaining in Hospital at end of 1931.	Yearly Admissions	Total Cases Treated.	Total Deaths.	Remaining in Hospital at end of 1932.	All Cases including both In- and Out-Patients.
VII. Diseases of the Genito-Urinary System (non-Venereal)—*continued.*						
136. Diseases (non-Venereal) of the Genital Organs of Man—						
Epididymitis	...	17	17	1	...	31
Orchitis	1	59	60	1	1	620
Hydrocele	5	65	70	2	2	211
Ulcer of Penis	2	29	31	...	2	133
Varicocele	...	2	2	...	...	4
Others	9	223	232	2	5	417
137. Cysts or other non-malignant Tumours of the Ovaries	...	52	52	1	...	145
138. Salpingitis :—						
Abscess of the Pelvis	...	27	27	4	...	67
139. Uterine Tumours (non-malignant)	...	8	8	...	1	18
140. Uterine Hæmorrhage (non-puerperal)	...	4	4	...	..	33
141. A.—Metritis	...	7	7	...	...	35
B.—Other affections of the Female Genital Organs—						
Displacement of Uterus	...	34	34	...	...	75
Amenorrhœa	...	6	6	...	...	122
Dysmenorrhœa	...	11	11	...	...	207
Leucorrhœa	...	5	5	...	1	173
Others	1	117	118	2	4	173
142. Diseases of the Breast (non-puerperal)—						
Mastitis	3	29	32	1	2	471
Abscess of Breast	2	23	25	...	...	115
Others	1	7	8	...	...	46
VIII. Puerperal State.						
143. A.—Normal Labour	15	853	815	6	19	1,506
B.—Accidents of Pregnancy—						
(*a*) Abortion or Miscarriage	5	100	158	1	4	278
(*b*) Ectopic Gestation	...	3	3	...	...	4
(*c*) Other accidents of Pregnancy	2	67	69	19	...	100
C.—Ante-natal supervision	5	94	99	...	3	12,110
144. Puerperal Hæmorrhage	...	2	2	1	...	2
145. Other accidents of Parturition	1	106	107	28	3	119
146. Puerperal Septicæmia	...	21	21	11	1	21
147. Phlegmasia Dolens	...	...	...	...	...	1
148. Puerperal Eclampsia	...	...	...	...	...	1
149. Sequelæ of Labour	...	6	6	...	...	11
150. Puerperal affections of the Breast	...	...	...	...	...	7
IX. Affections of the Skin and Cellular Tissues.						
151. Gangrene	1	23	24	3	1	29
152. Boil	...	48	48	...	1	4,836
Carbuncle	1	13	14	...	..	39
153. Abscess	29	683	712	12	22	7,306
Whitlow and Onychia	7	98	105	...	2	2,377
Cellulitis	11	317	328	8	11	7,050
154. A.—Tinea	...	4	4	...	...	2,241
B.—Scabies	4	145	149	...	9	37,412
155. Other Diseases of the Skin—						
Erythema	...	10	10	...	...	205
Urticaria	...	9	9	...	...	475
Eczema	1	17	18	...	1	1,202
Herpes	...	5	5	...	...	390
Psoriasis	...	...	...	...	...	87
Elephantiasis	4	88	92	2	8	486
Myiasis	...	3	3	...	...	14
Chigoes	...	33	33	...	5	638
Cutaneous Leishmaniasis	...	...	...	...	...	3
Ulcers	185	2,278	2,463	33	201	43,909
Others	7	195	203	5	2	2,714
X. Diseases of the Bones and Organs of Locomotion (Other than Tuberculous)—						
156. Diseases of the Bones—						
Osteitis	3	17	20	...	1	90
Periostitis	...	23	23	...	1	164
Others	3	30	33	4	1	67
157. Diseases of Joints—						
Arthritis	5	57	62	1	4	1,208
Synovitis	3	77	80	...	6	1,214
Others	...	8	8	...	...	123
158. Other diseases of Bones or Organs of Locomotion—						
(*a*) Teno-synovitis	...	2	2	...	...	31
(*b*) Ganglion	...	15	15	...	...	210
(*c*) Others	2	3	5	...	...	76

Tables V and VI.—*contd.*

DISEASES.	Table V.					Table VI.
	Remaining in Hospital at end of 1932.	Yearly Admissions.	Total Cases Treated.	Total Deaths.	Remaining in Hospital at end of 1933.	All Cases including both In- and Out-Patients.
XI. Malformations.						
159. Malformations—						
Hydrocephalus	...	...	...	...	...	2
Hypospadias	...	5	5	...	...	5
Spina Bifida	...	1	1	...	...	1
Others	...	2	2	...	...	2
XII. Diseases of Infancy.						
160. Normal living babies	22	822	844	9	20	1,916
160A. Congenital Debility	...	12	12	8	1	156
161. Premature Birth	...	58	58	3	...	92
162. Other affections of Infancy	...	19	19	3	...	41
162A. Babies still-born	...	...	...	...	...	120
163. Infant neglect (infants of three months or over)	...	...	...	...	...	1
XIII. Affections of Old Age.						
164. Senility—						
Senile Dementia	1	10	11	5	...	29
XIV. Affections produced by External Causes.						
165. Suicide by Poisoning	...	1	1	...	...	1
166. Corrosive Poisoning (intentional)	...	...	...	...	...	...
167. Suicide by Gas Poisoning	...	...	...	...	...	...
168. Suicide by Hanging or Strangulation	...	...	...	...	...	...
169. Suicide by Drowning	...	...	...	...	...	...
170. Suicide by Firearms	...	...	...	...	...	...
171. Suicide by cutting or stabbing instruments	...	...	...	...	...	...
172. Suicide by jumping from a height	...	...	...	...	...	...
173. Suicide by crushing	...	...	..	...	...	...
174. Other suicides	...	...	...	...	...	...
175. Food Poisoning—						
Botulism	...	5	5	...	...	6
176. Attacks of poisonous animals—						
Snake Bite	...	75	75	2	...	350
Insect Bite	...	12	12	...	...	349
177. Other accidental Poisonings	...	2	2	...	...	38
178. Burns (by fire)	22	459	481	33	28	6,374
179. Burns (other than by fire)	...	60	60	4	2	437
180. Suffocation (accidental)	...	...	...	...	...	...
181. Poisoning by Gas (accidental)	...	...	...	...	...	...
182. Drowning (accidental)	...	...	...	...	...	...
183. Wounds (by Firearms, war excepted)	...	5	5	...	1	5
184. Wounds (by cutting or stabbing instruments)	25	842	867	27	45	20,040
185. Wounds (by fall)	3	232	235	7	4	8,249
186. Wounds (in Mines or Quarries)	...	1	1	...	...	38
187. Wounds (by Machinery)	1	13	14	...	...	14
188. Wounds (crushing, *e.g.*, railway accidents, etc.)	...	19	19	2	...	105
189. Injuries inflicted by Animals, Bites, Kicks, etc.	10	160	170	11	6	1,059
190. Wounds inflicted on Active Service	...	...	...	...	...	...
191. Executions of civilians by belligerents	...	...	...	...	...	...
192. A.—Over fatigue	...	...	...	...	...	1
B.—Hunger or Thirst	...	8	8	2	1	9
193. Exposure to Cold, Frost bite, etc.	...	...	...	...	...	...
194. Exposure to Heat—						
Heatstroke	...	...	...	...	...	19
Sunstroke	...	...	...	...	...	...
195. Lightning Stroke	...	12	12	1	1	21
196. Electric Shock	...	...	...	...	...	...
197. Murder by Firearms	...	...	...	...	...	...
198. Murder by cutting or stabbing instruments	...	1	1	1	...	2
199. Murder by other means	...	...	...	...	...	1
200. Infanticide (murder of an infant under one year)	...	...	...	...	...	...
201. A.—Dislocation	1	31	32	...	1	200
B.—Sprain	1	90	91	...	4	2,750
C.—Fracture	31	410	441	19	28	843
202. Other external Injuries	58	2,207	2,265	24	85	47,661
203. Deaths by Violence of unknown cause	...	...	...	...	...	...
XV. Ill-Defined Diseases.						
204. Sudden Death (cause unknown)	...	1	1	1	...	2
205. A.—Diseases not already specified or ill-defined—						
Ascites	2	39	41	5	2	117
Œdema	2	23	25	6	1	130
Asthenia	2	40	42	9	2	519
Shock	...	2	2	1	...	2
Hyperpyrexia	...	...	...	...	...	1
B.—Malingering	...	9	9	...	...	633
XVI. Diseases, the total of which have not caused 10 deaths, including N.A.D. and N.Y.D.	11	146	157	11	3	1,947
Cases not recorded by diseases	...	10	10	...	...	899
Total, Sections I to XVI	...	...	...	...	...	743,719
Examinations	...	130	130	...	6	141,637
GRAND TOTAL	1,071	30,071*	31,142*	1,357*	1,237	885,356

* Does not include still births.